

THE MINING CONGRESS JOURNAL

FEBRUARY, 1918

VOL. IV

No. 2

SAFETY-EFFICIENCY-CONSERVATION



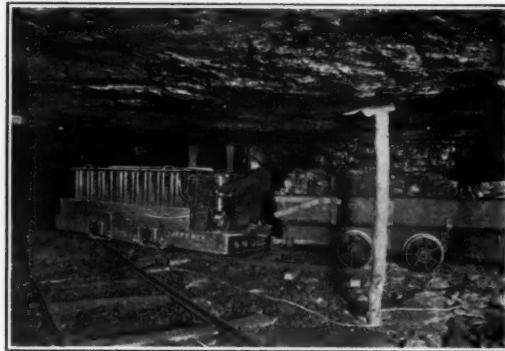
HARRY D. NIMS

Principal assistant to the Fuel Administrator, who took a prominent part in drafting the "fuelless" day order.

PUBLISHED BY
THE AMERICAN MINING CONGRESS
PUBLICATION OFFICE
MUNSEY BUILDING

\$ 2.00 PER YEAR

WASHINGTON, D. C.
20¢ PER COPY



THE MINE LOCOMOTIVE BATTERY has a big job on its hands—so big that an ordinary storage battery cannot meet the requirement.

A battery possessing not only ample capacity, but one with more than the average durability, is essential. Its power must be unfailing—its care a minimum.

The "Ironclad-Exide" Battery

with its built-in power and durability, has established a standard of battery dependability for the Mine Locomotive. Its special positive plate construction, patented cell cover and non-flooding vent plug are a few of the exclusive features which back up that standard. Its ability to withstand the jars and strains of coal mine service is an undisputed fact. The care it requires is relatively small.

In the many mines where it is used the "Ironclad-Exide" battery is helping to reduce high-haulage costs. It will do the same in yours.

Address the nearest sales office for further information.

THE ELECTRIC STORAGE BATTERY CO.

Manufacturer of

The "Chloride Accumulator", The "Tudor Accumulator",

The "Exide", "Hycap-Exide", "Thin-Exide" and "Ironclad-Exide" Batteries

PHILADELPHIA, PA.

New York Boston Chicago Washington Minneapolis Rochester Detroit St. Louis
Cleveland Atlanta Pittsburgh Kansas City San Francisco Denver Toronto

1888-1917

How do you do!

We are going to try to tell you something in this space every month about—



—but this month we want to remind you of something.

Your own conditions are critical and precedent wrecking, and don't forget that the Shovel Business is having the same experience.

If you want shovels when you need them, get them now.

If you want shovels that have advanced with the times, get Wyoming Red Edge Chrome Nickel Steel Shovels.

You can get catalog, prices and delivery from our Distributors who are located in every Mining Center.

Write to us.

THE WYOMING SHOVEL WORKS
WYOMING, PA.



“BULLDOG”

Rock Drill Steel

Hollow and Solid

Used Wherever the Best Is Needed

Manufactured only by the

INTERNATIONAL HIGH SPEED STEEL COMPANY

IN ALL SIZES



AND ALL SECTIONS

Has for TWELVE YEARS held all records for QUALITY,
EFFICIENCY, and UNIFORMITY, and is daily
MAKING NEW RECORDS

Works:
Rockaway, N. J.

Main Office:
99 Nassau Street, New York City

THE MINING CONGRESS JOURNAL

FEBRUARY

CONTENTS

1918

METAL	
California production.....	56
Colorado Metal Mining Association.....	44
Denver Convention.....	44
Iron ore production.....	57
Mineral director.....	62
Mining Congress expands.....	44
Norway to get metals.....	53
Tolovana district.....	43
West to cooperate.....	44
COAL	
Alaskan leasing.....	54
Bunker prices.....	66
Bunker situation.....	48
Coal distribution.....	43, 47
Coal hearing.....	50
Coalless days defended.....	59
December production.....	64
District Representative.....	64
Fuel conservation.....	55
Hoarding.....	52
Increase explained.....	43
Manning on coal waste.....	65
Mines not slowed down.....	48
Morrow, J. D. A. (cut).....	43
New England situation.....	55
Overtime.....	52
Power waste.....	46
Rocky Ridge dispute.....	55
Smokeless shipments.....	64
State administrators.....	54
Tennessee prices.....	61
Wage agreement.....	42
Waterways.....	61
West Virginia Chapter.....	49
OIL	
Oil administrator.....	58
Oil Section—Colorado Chapter.....	48
Requa, M. L.....	58
Use of gas.....	60
Wyoming oil men meet.....	56
MISCELLANEOUS	
Cement output.....	48
Editorials:	
Silver situation.....	35
War excess profit tax.....	35
Government railroad control.....	37
A hopeful outlook.....	37
Look higher up.....	38
Self-regulation of industry.....	38
Fourteen days of foolishness.....	39
A mineral dictatorship.....	40
Price, final dictator of production.....	41
Excess profits.....	42
Henderson, C. B. (cut).....	61
Nims, H. G. (cut).....	Front cover
Passenger service.....	56
Wood as fuel.....	60
INDEX TO ADVERTISERS	
Ainsworth, William & Son.....	11b
Allis Chalmers Mfg. Company.....	4f
Allison Coupon Company.....	7b
American Mine Door Company.....	Inside back cover
American Steel & Wire Company.....	15f
American Tempering Company.....	11b
Aldrich Pump Co., The.....	19b
Atlas Powder Company.....	10f
Automatic Reclosing Circuit Breaker Co., The.....	7b
Bartlett & Snow & Co., C. O.....	17b
Buckeye Rolling Mill Co., The.....	18b
Channon Company, H.....	15f
Chicago Belting Company.....	7f
Chicago Perforating Company.....	18b
Cross Engineering Co.....	17b
Denver Quartz Mill & Crusher Co., The.....	9b
duPont de Nemours Powder Co., The E. I.....	10f
Electrical Material Company.....	19b
Electric Railway Equipment Company.....	18b
Egyptian Timber Co.....	13b
Egyptian Iron Works.....	Inside back cover
Elmore, G. H.....	7b
Electric Storage Battery Co.....	Inside front cover
Equitable Powder Company, The.....	10f
Four Wheel Drive Auto Company, The.....	3b
General Electric Company.....	13f
General Briquetting Co., The.....	11b
Granville Supply Co.....	11b
Goodall Brothers.....	18b
Goodin-Reid & Company.....	14f
Goodman Mfg. Company.....	6f
Goodrich Rubber Company, The B. F.....	1b
Harker Mfg. Company.....	8f
Hazard Mfg. Company.....	17b
Hockensmith Wheel & Mine Car Company, The.....	Inside back cover
Hoffman Brothers.....	18b
Holmes & Bros. Inc., Robert.....	9f
Hunt & Company, Robert.....	9b
Illinois Zinc Company.....	9b
Indiana Laboratories Co., Inc., The.....	18b
International High Speed Steel Company.....	2f
Irvington Smelting & Refining Works.....	9b
Jeffrey Mfg. Company, The.....	Outside cover
Koering Cyaniding Process Company.....	5b
Laubenstein Mfg. Co.....	11b
Ledoux & Company, Inc.....	9b
Leetonia Tool Company, The.....	9b
Lehigh Coal & Navigation Company, The.....	15b
Longyear Company, E. J.....	9b
Macomber & Whyte Rope Company.....	17b
Mariondeaux, Stott & Beck.....	18b
Monongahela Wood Preserving Co.....	11b
Nicholson & Co., W. H.....	18b
Ohio Brass Company, The.....	Inside back cover
Ohio Grease Company, The.....	13b
Pacific Tank & Pipe Co.....	13b
Pneumelectric Machine Co.....	9f
Phelps-Dodge Corporation.....	9b
Phillips Mine & Mill Supply Co.....	12f
Prox Company, The Frank.....	7b
Quaker City Rubber Co.....	14f
Richards, J. W.....	18b
Springer, Andrew M.....	5f
Standard Scale & Supply Co., The.....	12f
Stephens-Adamson Mfg. Co.....	10f
Thorne, Neale & Company, Inc.....	15b
Union Electric Co.....	5b
Vulcan Iron Works.....	8f
Western Chemical Mfg. Company, The.....	18b
West Virginia Rail Company, The.....	11b
Williams' Improved Stretcher Company.....	13b
Wilmet Engineering Co.....	11b
Wood Equipment Company, The.....	6f
Worthington Pump & Machinery Corp.....	4f
Wyoming Shovel Works.....	1f

Allis-Chalmers Manufacturing Co.

MANUFACTURE OF

High Grade Mining and Metallurgical Machinery

Complete Equipment for Mining Plants,
Reduction Works and Smelting Works

We offer our customers the services of specially trained engineers, and the unparalleled advantages of our extensive and completely equipped works.

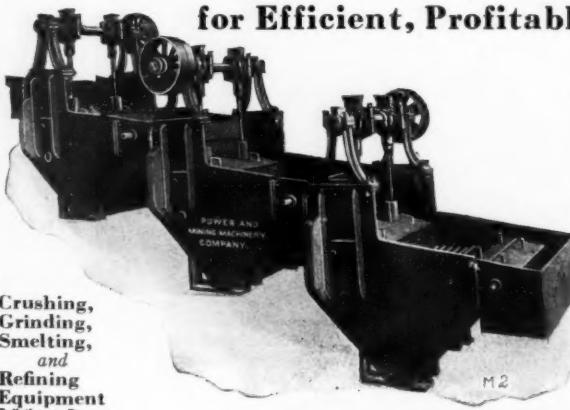
MILWAUKEE

WISCONSIN

Offices in Principal Cities

Woodbury Jigs

for Efficient, Profitable Concentration



Crushing,
Grinding,
Smelting,
and
Refining
Equipment
Bullets on Request

Woodbury Jigs insures a Uniform Discharge over entire width of Jig and the separating of a true middling by holding back the light mineral and tailings with hydraulic water.

The Woodbury Jig gives absolutely uniform pulsation the entire width of the sieve, making an ideal stratification. The Woodbury BULL JIG provides very large capacity and endurance under rough work.

Ask for Bulletin 45-130. It gives information in full

Worthington Pump and Machinery Corporation

115 Broadway, New York

M 438.4

Branch Offices in all Principal Cities Power & Mining Machinery Works, Cudahy, [Suburb of Milwaukee] Wis.

The Labor Question Solved

Telegram from One of My Clients

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	W
Night Message	N
Night Letter	N.L.

If none of these symbols appears after the check (number of words), this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. S. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	W
Night Message	N
Night Letter	N.L.

If none of these symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

RECEIVED AT

24g by 12

STANAFORD W VA 1125 a Jan 11

A M SPRINGER

PGH PA

YOUR WIRE MEN COMING FASTER THAN WE CAN USE THEM AT PRESENT

ELKHORN PINEY COAL MINING CO

1156a

If you need Miners, Laborers, Loaders, etc., write and I will call at your Mine or Office and advise you.

This is Not a Labor Agency

ANDREW M. SPRINGER

4 SMITHFIELD STREET

PITTSBURGH, PA.

Performing a Patriotic Duty

EVERY individual and every organization contributing toward those things which Our Country needs to strengthen her position and her effective power for war waging, is performing a patriotic duty, small or great.

Our contribution as an engineering organization is in the important work of supplying the means of improving certain mine conditions, in order to (1) release men from non-productive labor and make them available for increased fuel production or for personal war activity, and (2) speed up, directly and indirectly, the entire operation of the mine, thus increasing the fuel output.

The effect of the Pneumatic Rotary Dump is far-reaching, as it not only reduces the labor and increases the speed of mine car unloading, but also by opening wider the outlet and removing causes of congestion in all the channels of flow, increases the ease and rapidity of every movement, all the way from the extremities.

WOOD EQUIPMENT CO.

MCCORMICK BUILDING

NEW YORK
Architects Bldg.

PITTSBURGH
Union Bank Bldg.

CHICAGO, ILLINOIS

KNOXVILLE
Holston Bank Bldg.
(17)

“The Goodman Company Sure Does Make a Mining Machine”

Said a mine Superintendent of long experience to the writer of this ad.



Is the Goodman Machine **your** trouble reducer and coal producer? If not, you are missing something in these days of intensive demand.

You should have Bulletin 103-M

GOODMAN MANUFACTURING COMPANY, Chicago, Ill.

New York
Charleston, W. Va.

Pittsburgh
Birmingham

Cincinnati
Denver

St. Louis
Seattle

(60)

Sea-Lion

Waterproof
LEATHER BELTING

Is the safe belting to specify for drives exposed to steam or moisture. It is the best economy you can practice to put dependable belting on your main power drive and avoid the loss of shutting down for repairs. SEA-LION Waterproof Leather Belting will give you this security. One SEA-LION Leather Belt, we recently learned, gave twenty years of uninterrupted service on a main drive under severe conditions. This is not an exceptional performance.

Through all our extensive advertising we have always kept performance ahead of promise, therefore you may accept the expression that SEA-LION is an earnest attempt to make the best waterproof belting on the market, as a conservative statement of what SEA-LION actually is.

Write for Data Book and Catalog of value and interest to all mine owners and operators.

Chicago Belting Co.

102 No. Green St.

CHICAGO, U. S. A.

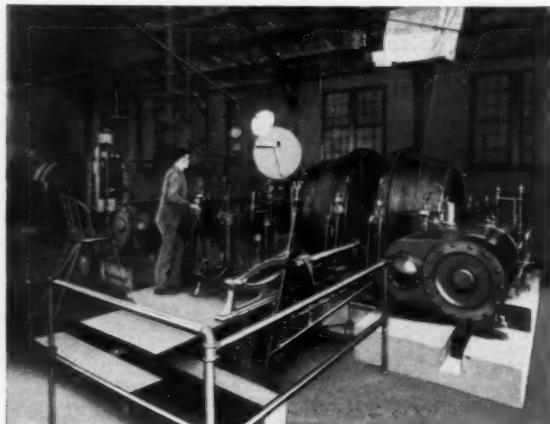
New York
Cleveland
Rockford, Ill.
New Orleans

Los Angeles
San Francisco
Seattle, Wash.
Portland, Ore.



This *Vulcan Steam Hoist* has been lifting seven to eight hundred tons a day for the past ten years.

It is just as good today as it was ten years ago—
Because it is a *Vulcan*.



Vulcan Hoist made for Penna. Coal & Coke Company, Cresson, Pa.

The name "Vulcan" on a Hoist stands for the *best* of materials, the *best* of workmanship and the *best* of service.

A Vulcan Hoist can make good for you.

A letter will start the ball a-rolling.

VULCAN IRON WORKS
1736 Main Street
Wilkes-Barre, Pa.
New York Chicago

VULCAN HOISTS

AMERICAN BULL DOG No. 150 The Very Last Word in Miners' Carbide Lamps



PATENTED

Made with Top or Side Water Control
Made with or without Cap Clamp Bar
Made with or without Self-Lighter
Furnished with any size Reflector
Lamps are made of brass if desired

Candlestick Attachment
also if desired.

Saves Time and Money

REASONS WHY—

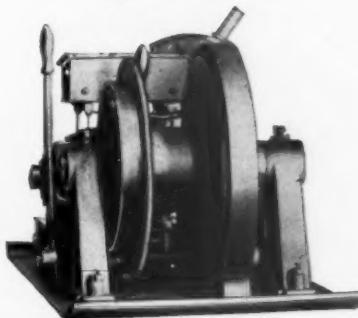
Burns 20% less carbide.
Has "Brite-Lite" perfect water feed that will not clog. No pounding or jiggling.
Has detachable reflector, easily cleaned.
Burner tube perfectly straight; tip easily removed.
Carbide container has knurled beads, making it easily unscrewed. Will not stick.
Light in weight, weighing only 4 $\frac{3}{4}$ ounces.
Compact and sturdy; height over all, 3 $\frac{5}{8}$ inches.

BRITE-LITE

WRITE FOR BULLETIN
HARKER MFG. COMPANY
410-412 E. Pearl Street CINCINNATI, OH

Pneumelectric
TRADE MARK.

For
Handling
Cars
Any
Place



Made in
Single
and
Double
Drum

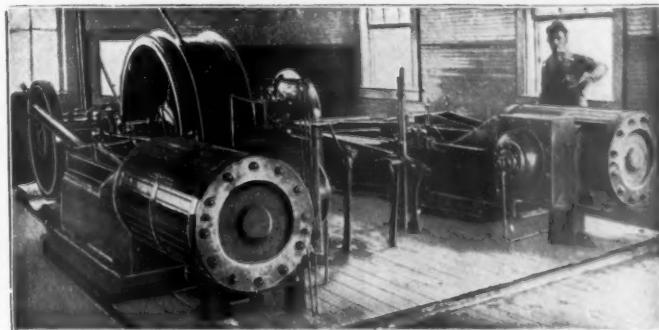
5-Horse power Electric Hoist.
Specially adapted for use in and about the mines.
We also manufacture electrically operated Rock Drills, Coal Punchers,
and Gathering Pumps.
Full information furnished on request.

THE PNEUMELECTRIC MACHINE COMPANY
SYRACUSE, N. Y.

ROBT. HOLMES & BROS., Inc.

Successors to DANVILLE FOUNDRY & MACHINE CO.

Corner North and Hazel Streets, Danville, Ill.



MANUFACTURERS OF

Danville Hoisting and Haulage Engines, both Light and Heavy Duty Type, first and second motion.
Halbert's Patent Self Dumping Cages.
Plain Cages.
Holmes' Shaker Screen.
Holmes' Telescoping End Loader.
All kinds of Plate Metal Work, particularly for coal mines.

Holmes' Patent Weigh Hopper.
Holmes' Automatic Car Lifts for mine bottoms.
Iron, Bronze and Brass Castings of all description.
Heavy Iron and Steel Forgings.



The Universal Dynamite—
Du Pont Red Cross Extra

The All-the-Year-'Round Explosive for Ore-Mining

Ore mining is conducted on high-production, economic and "safety-first" principles. Required strength is loaded and stung caps.

Red Cross Extra is made in strengths of 20 to 60%—a range sufficient to meet the requirements of ore mining. Don't over-look it's low-freezing property—a big factor in open work.

Tell us what are your blasting troubles. Let's help you cut your cost per ton and speed-tip production. Address Dept. 8



E. I. du Pont de Nemours & Co.

Powder Makers Since 1802

Wilmington, Delaware



Blasting Machine Adapted to Ore Mining



AN EXPLOSIVE FOR EVERY REQUIREMENT

ATLAS BLASTING POWDER

ATLAS BLASTING SUPPLIES

Atlas Powder Company

WILMINGTON, DELAWARE

The Equitable Powder Manufacturing Company

Alton Blasting Powder

Alton High Explosives

Black Diamond Permissibles

FUSE and **CAPS**
Miscellaneous Supplies

Fort Smith, Ark., East Alton and Marion, Ill.
General Offices, East Alton, Ill.

Congress likely will be in session until the fall of 1918. The American Mining Congress will have a hand in any legislation which affects the mining industry. Facts and figures will be presented to speed the passage of measures for the good of mining or to prevent the enactment of legislation detrimental to the industry. In the whole history of Congress there have been few dishonest legislators. Many a discriminatory and unjust law has been put on the statute books nevertheless. The reason is that busy mem-

bers of Congress have not the time to digest the whole situation carefully. They are likely to assimilate it, however, if presented to them in tabloid form. This the Mining Congress does. Because of the activities of the Mining Congress it is improbable that any member of Congress, through ignorance of the miners' side of the question, will vote for a bill inimical to the industry. The Mining Congress sees to it that every legislator has an opportunity to be fully informed before the vote is taken on any bill which affects the men responsible for the nation's mineral output.

MINE SCALES

We Manufacture
All Sizes of **Heavy Scales** From One to
300-ton Capacity

"The Standard" Scales are strictly high grade throughout, both in material and workmanship. During an experience of over a quarter of a century, we have installed scales for many of the largest mining, manufacturing and railroad companies of the country, as well as for the U. S. Government.

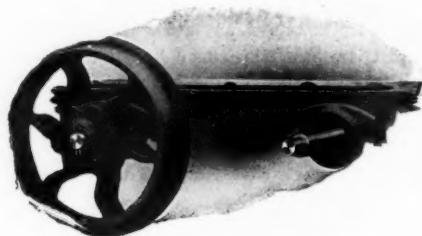
Send to our nearest office today and ask for Catalogue No. 83

THE STANDARD SCALE & SUPPLY CO.

Pittsburgh New York Philadelphia Baltimore Chicago Cleveland
1631 Liberty Ave. 145 Chambers St. 523 Arch St. 409 N. Gay St. 161 N. May St. 1547 Columbus Road

Phillips Patent Open Cap Wheel Truck

THE economies that this Truck will effect are real and tangible. The wheels will not wear out internally and are guaranteed in this respect: they seldom break, due to our process of annealing and the high quality of materials used; are thoroughly chilled, and when lubricated with fluid grease will run for six months to a year with our lubrication. This Truck is used at hundreds of Mines, two concerns each using over 10,000, while literally dozens of other companies have found it profitable to discard their old running gear in order to equip their cars with it exclusively. It will pay you to investigate this Truck.



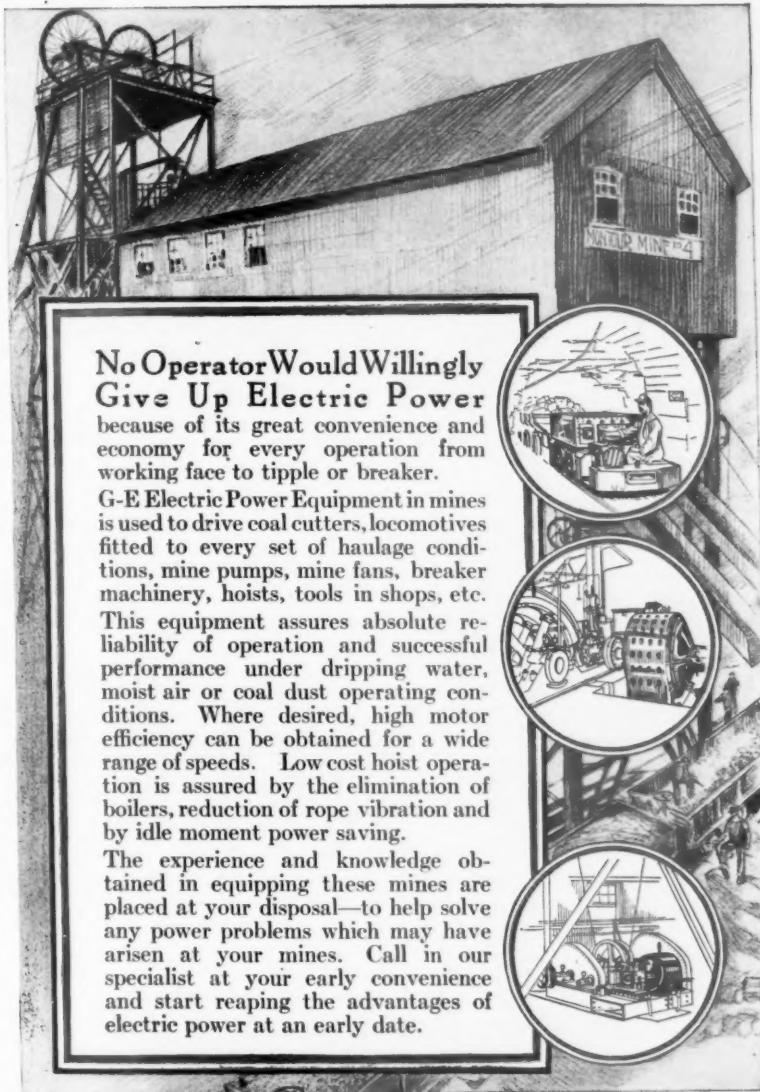
Write for full particulars

Phillips Mine and Mill Supply Company

Manufacturers of

Mine Cars and Trucks—Gravity Screening Equipments—Larry Wagons
Phillips Automatic Cross-Over and Automatic Push-Back Car Dumps

South Twenty-Third Street : Office and Works : PITTSBURGH, PENNA.



No Operator Would Willingly Give Up Electric Power
because of its great convenience and economy for every operation from working face to tipple or breaker.

G-E Electric Power Equipment in mines is used to drive coal cutters, locomotives fitted to every set of haulage conditions, mine pumps, mine fans, breaker machinery, hoists, tools in shops, etc. This equipment assures absolute reliability of operation and successful performance under dripping water, moist air or coal dust operating conditions. Where desired, high motor efficiency can be obtained for a wide range of speeds. Low cost hoist operation is assured by the elimination of boilers, reduction of rope vibration and by idle moment power saving.

The experience and knowledge obtained in equipping these mines are placed at your disposal—to help solve any power problems which may have arisen at your mines. Call in our specialist at your early convenience and start reaping the advantages of electric power at an early date.

GENERAL ELECTRIC COMPANY

General Office, Schenectady N.Y.



Sales Offices in all large cities

7021

136

FLAME-
PROOF

MILDEW-
PROOF

WATER-
PROOF



WILL
SAVE
YOU
MONEY

1. **The Red Diamond Everlastic Brand** is guaranteed to be thoroughly flame-proof, mildew-proof and water-proof. It is heavily coated with an absolutely non-porous and water-tight compound that resists hard wear.
2. **The Red Diamond Brand** is guaranteed flame- and mildew-proof but is not water-proofed.
3. **The Everlastic Brand** is guaranteed to be non-porous, water and mildew-proof but is not strictly flame-proof. It is heavily coated and withstands the hardest wear.

Goodin-Reid Brattice is made in three brands of the finest quality cotton duck properly treated to render it flame-, water- and mildew-proof

FREE SAMPLES FURNISHED FOR COMPARISON. SEND FOR YOURS TODAY

GOODIN-REID & COMPANY

CINCINNATI, OHIO

Mechanical
Rubber Goods
for Mining----



Factories, Quaker City Rubber Company, Philadelphia

In MINING OPERATIONS, everywhere, you will find our brands of Rubber Belting for Conveyors, Elevators, Main Drives, Mill Drives, etc.

Our Belting Experts are ever ready to advise you about the kind of belting to use for any particular purpose. No charge for this service. A 180-page, illustrated catalog will be sent free on request. Please use your business letterhead.

QUAKER CITY RUBBER COMPANY

Philadelphia, 629 Market Street
Pittsburgh, 211 Wood Street

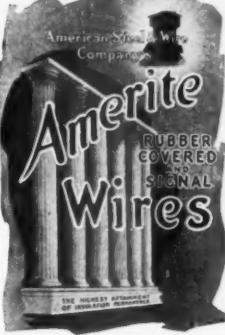
Chicago, 182 West Lake Street
New York, 53 Murray Street

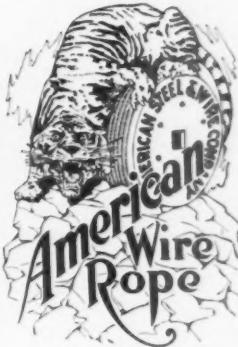
AWARDED
PANAMA PACIFIC
GRAND
PRIZE
INTERNATIONAL EXPOSITION

Americore
RUBBER COVERED WIRE
for INTERIOR WIRING
ALL SIZES AND VOLTAGES

Every coil examined and labeled under the direction of the underwriters' laboratories. Ignition wire for autos, motor boats and aeroplanes.

Send for booklet fully describing.





For elevators, dredges, lumbering, mining, oilwell drilling, suspension bridges, stump pulling, cranes, derrick, shovels, rigging and every other form of wire rope use.

Ask for illustrated catalogue.

Read about wire rope usage in its different requirements in American Wire Rope News. Gladly sent free to anyone upon request.

AWARDED
PANAMA PACIFIC
GRAND
PRIZE
INTERNATIONAL EXPOSITION

Supreme Award of Merit

Made by

American Steel & Wire Company

Chicago
Pittsburgh

New York
Worcester

Cleveland
Denver

H. Channon Company

MINING SUPPLIES

CHICAGO, ILLINOIS

◆ ◆ ◆

Filter Cloths
Machinery
Contractors Equipment
Heavy Hardware
Manila and Wire Rope
Machinists Supplies
Mechanical Rubber Goods

Brattice Cloth
Belting, Packing and Hose
Tents
Manufactured Canvas Goods
Twines and Cordage
Engineers Supplies
Mill Supplies

◆ ◆ ◆

GRIPWELL AUTO TIRES

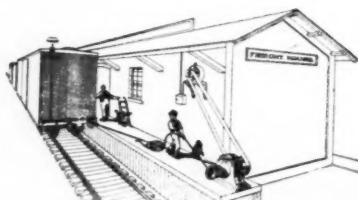
Unexcelled Service

Dependable Merchandise

New Catalog now ready. Send for your copy

“S-A” Safety Car Pullers

**Don't Wait for a Train Crew
Keep Your Shipping Gang Busy**



Use an “S-A” Car Puller and quickly replace loaded cars with “empties.” Built in a wide variety of sizes and styles.



**Style No. 999 A—Self-Contained Motor Driven, Horizontal Capstan Car Puller
Planetary Gear Driven**

Simple, powerful machines that are “making good” under severe conditions. Furnished also with pulley for belt drive to line shaft.

Write for Bulletin No. 80

Prices on Application

Stephens-Adamson Mfg. Co., Aurora, Illinois

BRANCH OFFICES:

Chicago New York
Huntington, W. Va.

St. Louis Pittsburgh
Boston

Detroit Salt Lake City
Toronto, Can.

VOL. 4, No. 2

WASHINGTON

FEBRUARY, 1918

THE MINING CONGRESS JOURNAL

Official Organ of the American Mining Congress

THE SILVER SITUATION

That price is the ultimate controlling influence in production is well illustrated by its effect upon the production of silver.

When silver and gold were maintained at a parity, aside from temporary fluctuations, the silver production of the world as compared with gold was maintained as a whole at a ratio of about fifteen and one-half to one.

After the demonetization of silver, its production rapidly decreased until it reached a point of $7\frac{1}{2}$ ounces of silver to 1 of gold. During recent months the price has turned toward higher levels as the governments of the world have found it necessary to restrict the exportation of gold.

At this time our own Government needs large quantities of metallic money with which to settle its foreign trade balances with countries which are willing to accept silver. The present production of silver is so small that no supply is available to meet these requirements except as the reserve in the United States Treasury, held for the security of its silver certificates, shall be withdrawn.

This silver cannot be withdrawn except by act of Congress, and a plan is being considered by which the Government shall purchase for future delivery enough silver to replace the amount withdrawn from the Treasury and that the silver certificates temporarily withdrawn from circulation shall be again reissued whenever the silver is delivered to the Government to replace the silver withdrawn from the Treasury reserve.

Whether these purchases are to be made at a fixed price or whether in the open market is one of the difficult questions for solution. Silver producers would prefer to sell in the open market than to agree with the Government on a fixed price. It has been demonstrated that the cost of producing silver is now almost double what it was a few years ago, and in consequence that even a price equaling the rupee coinage value would not be sufficient to stimulate the increased production which will be essential if the Government's needs are to be met.

It is believed that the price of silver for manufacturing purposes and in the arts would quickly advance to a point in excess of its coinage value in the Indian rupee if it were not for the embargo upon exportation. It is also believed that the need of silver as money in the silver-using countries will create such a demand that its price will not again fall to the average of recent years. Altogether, the question is one of intense public concern, and for the first time in many years interest in this question is being aroused by people who are not producers of silver.

THE WAR EXCESS PROFITS TAX

In the January issue we presented the suggestions which had been made to the War Excess Profits Tax Advisory Committee of the Treasury Department to be considered in framing the regulations under which the revenue law shall be applied, and also an amendment to the law which was proposed to eliminate defects which it was thought could not be covered by regulations. A large number of

conferences have since been held by the committee representing the mining industry and the Advisory Committee of the Treasury Department.

It was found, upon discussion, that some features of the proposed amendment did not meet the approval of the Treasury Department, and it was found necessary to withdraw the optional clause, which, while not so intended by the mining committee, appeared to ask for the right to settle under the provision of the present law or under the new amendment, as the interest of the taxpayer might dictate. This seemed to offer opportunity for the payment of a less tax, and the position of the mining men was that they did not seek to lessen the amount of taxation upon the mining industry, but only to equalize it as compared with other industries and with different branches of the mining industry as compared with each other. This apparent inconsistency made it necessary to withdraw the request for the optional clause, which was originally intended to permit settlement under the provisions of Sections 205 and 210, where those sections were intended by the framers of the law to apply.

From various letters received by this office in response to requests for criticisms of the bill, it was found also that the newer developments had not been properly considered, and that no provision had been made for those companies having no pre-war earnings.

As a result, the following proposed amendment was agreed upon, and has been submitted to the Treasury Department for its consideration:

PROPOSED AMENDMENT

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That Section 207, of Title 2, of the Act entitled "An Act to provide revenue to defray war expenses and for other purposes," approved October 3, 1917, be amended by the addition of a new subdivision "C" to Section 207, reading as follows:

(C) In the case of mines, oil and gas wells, invested capital therein means:

(1) The average net income thereof during the pre-war period capitalized at 8 per centum.

(2) If there were no net income during the

pre-war period, but if there were net income prior to January 1, 1917, then invested capital means the net income thereof for the taxable year 1917, capitalized at a percentage equal to the ratio of net income to invested capital as determined above for the same calendar year of representative corporations, partnerships, or individuals engaged in a like or similar business, operating under similar conditions, and the provisions of this paragraph shall apply to cases coming within the scope of Section 205 of this Act.

(3) If there were not net income prior to January 1, 1917, then the mines, oil or gas wells shall, for the first two taxable years only, be deemed to have no invested capital, and within Section 209 of this Act, and shall pay for such two years the tax provided in that section; thereafter the invested capital therein means the average net income of the first three years thereof capitalized at a percentage equal to the ratio of net income to invested capital as determined above for the same calendar years of representative corporations, partnerships, or individuals engaged in a like or similar business, operating under similar conditions.

(4) And subsequent capital additions, paid in or earned surplus and undivided profits used or employed in the business, exclusive of undivided profits earned during the taxable year.

(5) But in no event shall the invested capital so determined be less than the actual cash paid in.

EXPLANATORY STATEMENT

Under the Excess Profits Tax Act, both the deduction and the rate of tax are a function of invested capital. The act defines invested capital as "the actual cash value of tangible property." As applied to mines, oil and gas wells, admittedly there is no certain way of physical valuation. "The rational valuation of such a property is described as the present value of future profits." (W. L. Uglow, "Mine Valuation," page 27.) J. R. Finlay ("Mining Costs," page 15) says: "The question that determines the value of such property is what annual income does it yield?"

We, therefore, suggest that such properties be valued by capitalizing their average income during the pre-war period. As the Income Tax Act allows the owner of such properties, in arriving at his net income, an annual depletion or sum for amortization of investment, our capitalization method need not be complicated by inclusion of compound interest or sinking fund formulae. We have accordingly adopted for established concerns a straight capitalization of the pre-war income at 8 per cent.

The effect of this is that such concerns will be allowed a deduction for the taxable year equal to the average pre-war earnings, and the tax will fasten on the excess at the rates prescribed in the Act.

There remain two exceptional classes—first, the company that has no pre-war earnings, but

has become prosperous since January 1, 1914; and, second, the new concern or prospector.

The former class is allowed by the proposed amendment a capitalization on the basis of representative concerns. It is a fair assumption that their income is the same percentage of invested capital as the average income of representative concerns engaged in the same industry. It is just that they should pay the same rate of tax. Paragraph 2 of the proposed amendment is intended to produce this result. For example, if a typical concern has earned in 1907 40 per cent on its "invested capital," the amendment determines the 1917 earnings as 40 per cent thereof.

The remaining class embraces prospectors and new companies. These require different treatment. They are the pioneers of the industry, and during the inevitable struggle of their formative period must be encouraged, if the industry is to be kept up and expanded. Known shortage of essential minerals confronts us unless immediate steps are taken to stimulate the exploration and exploitation thereof and develop the mining activities needed. Therefore, a method is suggested which for the first two years of taxable income considers them as having only normal capital within Section 209, and imposes a fixed tax of 8 per cent on the net income. Thereafter they fall within the second class, and capital invested is determined accordingly.

Among the advantages attainable through the proposed amendment are:

1. It equalizes taxation within the industry.
2. It removes the necessity on the part of the Government for physical valuation of mines, oil and gas wells.
3. It affords a simple method to calculate the tax and verify returns through income tax records already filed with the Government.
4. It permits the taxpayer to estimate in advance the amount of his annual tax, and set aside, monthly, if desired, a sum sufficient to meet the same.
5. It places the industry on the same footing as other industries and imposes on it approximately the same tax.

Respectfully submitted,

Oil and Gas:

JOHN J. SHEA, Oklahoma.

W. M. H. DAVIS, Oklahoma.

J. F. COTTINGHAM, Oklahoma.

Coal:

A. G. DICKSON, Pennsylvania.

HERBERT POPE, Illinois.

Missouri Valley Lead and Zinc:

A. SCOTT THOMPSON, Oklahoma.

VICTOR RAKOWSKY, Missouri.

Western Metal Miners:

RAVENEL MACBETH, Idaho.

A. G. MACKENZIE, Utah.

Bulkeley Wells, Colorado.

Copper:

ARCHIBALD DOUGLAS, Arizona.

PAUL ARMITAGE, New York.

Attest:

J. F. CALLBREATH,
Secretary.

GOVERNMENT RAILROAD CONTROL

Very general approval has been given to the action of the President in taking absolute control of the railroads of the country. The fact that railroad officials approve this action is peculiarly significant. THE MINING CONGRESS JOURNAL approves this action, but condemns the conditions which have made it necessary. The transportation systems of the country, between the upper and the nether millstones of the Interstate Commerce Commission, with authority to fix the charges which it could make for its service, and the tax gatherers, and the labor unions, with power to take from the railroad without the formality of a bargain, have made impossible the increased equipment and terminal facilities which were necessary to handle the increasing business of the country. That railroad officials welcome an opportunity to lay down the increasing responsibilities to an extent proves the claims of railroad managers in the past, that they must be allowed to charge a higher price for the service rendered. It is true that there has been mismanagement, that too lavish salaries have been paid, that undue expense was incurred to secure business, and that a lack of coordination between the various lines in the handling of the country's business has largely increased expense and reduced the power of performance. Government operation at this time may secure perfect coordination, and, if properly exercised, be of substantial benefit to the country during present conditions. Those who believe that the Government should eventually control the transportation systems of the country, and those who approve because they believe that Government operation must necessarily be a failure, will have opportunity to see a demonstration of their respective beliefs.

A HOPEFUL OUTLOOK

Business conditions in Canada are reported to be in a most flourishing condition. Buying of all grades of goods is rapidly increasing in anticipation of a

conferences have since been held by the committee representing the mining industry and the Advisory Committee of the Treasury Department.

It was found, upon discussion, that some features of the proposed amendment did not meet the approval of the Treasury Department, and it was found necessary to withdraw the optional clause, which, while not so intended by the mining committee, appeared to ask for the right to settle under the provision of the present law or under the new amendment, as the interest of the taxpayer might dictate. This seemed to offer opportunity for the payment of a less tax, and the position of the mining men was that they did not seek to lessen the amount of taxation upon the mining industry, but only to equalize it as compared with other industries and with different branches of the mining industry as compared with each other. This apparent inconsistency made it necessary to withdraw the request for the optional clause, which was originally intended to permit settlement under the provisions of Sections 205 and 210, where those sections were intended by the framers of the law to apply.

From various letters received by this office in response to requests for criticisms of the bill, it was found also that the newer developments had not been properly considered, and that no provision had been made for those companies having no pre-war earnings.

As a result, the following proposed amendment was agreed upon, and has been submitted to the Treasury Department for its consideration:

PROPOSED AMENDMENT

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That Section 207, of Title 2, of the Act entitled "An Act to provide revenue to defray war expenses and for other purposes," approved October 3, 1917, be amended by the addition of a new subdivision "C" to Section 207, reading as follows:

(C) In the case of mines, oil and gas wells, invested capital therein means:

(1) The average net income thereof during the pre-war period capitalized at 8 per centum.

(2) If there were no net income during the

pre-war period, but if there were net income prior to January 1, 1917, then invested capital means the net income thereof for the taxable year 1917, capitalized at a percentage equal to the ratio of net income to invested capital as determined above for the same calendar year of representative corporations, partnerships, or individuals engaged in a like or similar business, operating under similar conditions, and the provisions of this paragraph shall apply to cases coming within the scope of Section 205 of this Act.

(3) If there were not net income prior to January 1, 1917, then the mines, oil or gas wells shall, for the first two taxable years only, be deemed to have no invested capital, and within Section 209 of this Act, and shall pay for such two years the tax provided in that section; thereafter the invested capital therein means the average net income of the first three years thereof capitalized at a percentage equal to the ratio of net income to invested capital as determined above for the same calendar years of representative corporations, partnerships, or individuals engaged in a like or similar business, operating under similar conditions.

(4) And subsequent capital additions, paid in or earned surplus and undivided profits used or employed in the business, exclusive of undivided profits earned during the taxable year.

(5) But in no event shall the invested capital so determined be less than the actual cash paid in.

EXPLANATORY STATEMENT

Under the Excess Profits Tax Act, both the deduction and the rate of tax are a function of invested capital. The act defines invested capital as "the actual cash value of tangible property." As applied to mines, oil and gas wells, admittedly there is no certain way of physical valuation. "The rational valuation of such a property is described as the present value of future profits." (W. L. Uglow, "Mine Valuation," page 27.) J. R. Finlay ("Mining Costs," page 15) says: "The question that determines the value of such property is what annual income does it yield?"

We, therefore, suggest that such properties be valued by capitalizing their average income during the pre-war period. As the Income Tax Act allows the owner of such properties, in arriving at his net income, an annual depletion or sum for amortization of investment, our capitalization method need not be complicated by inclusion of compound interest or sinking fund formulae. We have accordingly adopted for established concerns a straight capitalization of the pre-war income at 8 per cent.

The effect of this is that such concerns will be allowed a deduction for the taxable year equal to the average pre-war earnings, and the tax will fasten on the excess at the rates prescribed in the Act.

There remain two exceptional classes—first, the company that has no pre-war earnings, but

has become prosperous since January 1, 1914; and, second, the new concern or prospector.

The former class is allowed by the proposed amendment a capitalization on the basis of representative concerns. It is a fair assumption that their income is the same percentage of invested capital as the average income of representative concerns engaged in the same industry. It is just that they should pay the same rate of tax. Paragraph 2 of the proposed amendment is intended to produce this result. For example, if a typical concern has earned in 1907 40 per cent on its "invested capital," the amendment determines the 1917 earnings as 40 per cent thereof.

The remaining class embraces prospectors and new companies. These require different treatment. They are the pioneers of the industry, and during the inevitable struggle of their formative period must be encouraged, if the industry is to be kept up and expanded. Known shortage of essential minerals confronts us unless immediate steps are taken to stimulate the exploration and exploitation thereof and develop the mining activities needed. Therefore, a method is suggested which for the first two years of taxable income considers them as having only normal capital within Section 209, and imposes a fixed tax of 8 per cent on the net income. Thereafter they fall within the second class, and capital invested is determined accordingly.

Among the advantages attainable through the proposed amendment are:

1. It equalizes taxation within the industry.
2. It removes the necessity on the part of the Government for physical valuation of mines, oil and gas wells.
3. It affords a simple method to calculate the tax and verify returns through income tax records already filed with the Government.
4. It permits the taxpayer to estimate in advance the amount of his annual tax, and set aside, monthly, if desired, a sum sufficient to meet the same.
5. It places the industry on the same footing as other industries and imposes on it approximately the same tax.

Respectfully submitted,

Oil and Gas:

JOHN J. SHEA, Oklahoma.

W. M. H. DAVIS, Oklahoma.

J. F. COTTINGHAM, Oklahoma.

Coal:

A. G. DICKSON, Pennsylvania.

HERBERT POPE, Illinois.

Missouri Valley Lead and Zinc:

A. SCOTT THOMPSON, Oklahoma.

VICTOR RAKOWSKY, Missouri.

Western Metal Miners:

RAVENEL MACBETH, Idaho.

A. G. MACKENZIE, Utah.

BULKELEY WELLS, Colorado.

Copper:

ARCHIBALD DOUGLAS, Arizona.

PAUL ARMITAGE, New York.

Attest:

J. F. CALLBREATH,
Secretary.

GOVERNMENT RAILROAD

CONTROL

Very general approval has been given to the action of the President in taking absolute control of the railroads of the country. The fact that railroad officials approve this action is peculiarly significant. THE MINING CONGRESS JOURNAL approves this action, but condemns the conditions which have made it necessary. The transportation systems of the country, between the upper and the nether millstones of the Interstate Commerce Commission, with authority to fix the charges which it could make for its service, and the tax gatherers, and the labor unions, with power to take from the railroad without the formality of a bargain, have made impossible the increased equipment and terminal facilities which were necessary to handle the increasing business of the country. That railroad officials welcome an opportunity to lay down the increasing responsibilities to an extent proves the claims of railroad managers in the past, that they must be allowed to charge a higher price for the service rendered. It is true that there has been mismanagement, that too lavish salaries have been paid, that undue expense was incurred to secure business, and that a lack of coordination between the various lines in the handling of the country's business has largely increased expense and reduced the power of performance. Government operation at this time may secure perfect coordination, and, if properly exercised, be of substantial benefit to the country during present conditions. Those who believe that the Government should eventually control the transportation systems of the country, and those who approve because they believe that Government operation must necessarily be a failure, will have opportunity to see a demonstration of their respective beliefs.

A HOPEFUL OUTLOOK

Business conditions in Canada are reported to be in a most flourishing condition. Buying of all grades of goods is rapidly increasing in anticipation of a

continually rising market and a general increase of consumption. This condition is in marked contrast with the situation in this country, where fuel shortage and freight embargo are interfering with the ordinary course of business, and new enterprises are hesitating because of a probability of an increasing tax upon business operations. Canada, it is said, went through practically the same experiences in the early days of the war, as are now being experienced in the States. Notwithstanding the present depression, it is fair to assume that in the not distant future business will again assume its normal conditions, and that the increased consumption of goods necessitated by the war, will demand increased industrial activity and production in every line. Canada's experience justifies a rosy view of future business conditions in the United States.

LOOK HIGHER UP

The Wall Street Journal compares the ancient practice of arteriotomy as a treatment for fever with the embargo upon industry as a treatment for coal shortage. This treatment comprehended the bleeding of the patient until so weakened by loss of blood as to make normal his temperature.

"The duty of the Fuel Administrator," says the Wall Street Journal, "was to secure increased quantities of fuel and see that they were taken as expeditiously as possible where they could do most good. From those who know how to handle the traffic of the country he was offered an admirable zone system, involving the shortest possible hauling distances of coal, but turned it down for the extraordinary reason that he was afraid the coal operators might profit by it. He completely failed, in fact, in his job; and he now applies the topsy-turvy remedy of arteriotomy to the industries of the country. He says, in effect, that while there is not sufficient coal, in his opinion (a mistaken opinion, by the way), to supply these industries, if he can bleed them so that they will consume less coal, in a short time he will have achieved in another way the object for which his job was created and he himself appointed. If production is so contracted that there is plenty of coal for those who remain, Mr. Garfield not only thinks that he has succeeded, but that it is immaterial in which of the two ways he succeeds. The shortest way out of the difficulty now is removal of Garfield at once, because a man to

whom such a mental process is possible—and Mr. Garfield has shown that he considers his course natural and the simpler way—is totally unfit for such a post at a time when the country desperately needs all of the new work it can create."

THE MINING CONGRESS JOURNAL does not agree with the conclusion reached by our New York contemporary. Dr. Garfield undertook a most serious and difficult task—a task which would have appalled anyone with a full comprehension of the situation.

Having been selected for this trying position, with slaughter as the almost certain ending, because of conditions made for him and over which he had no control, it is hardly fair to demand his removal at the most trying time. Thus far the elements have been against him; summer will come with its relief. One held responsible for the effects of cold weather ought to have credit when milder weather brings its blessings.

Let the Wall Street Journal direct its shafts against the man higher up who was mainly responsible for destroying the Lane-Peabody plan.

Tom Johnson's school of Socialism has much to answer for.

SELF-REGULATION OF INDUSTRY

No great undertaking can be carried on successfully except there be somewhere lodged a power to finally determine its policy and procedure. The more nearly autocratic that central power becomes, the more effective its operations. The people of the United States, without respect to party, have, since the declaration of war with Germany, stood squarely behind President Wilson, outwardly endorsing and approving his every act, without regard to whether these acts were considered wise or otherwise. It has required much of patriotism to induce the approval of policies known to be foolish and believed to be fraught with grave danger to the country. The coal operators of the United States, with a capacity for the production of 50 per cent more coal than the country could possibly use in normal times, accepted with

out protest the Presidential order fixing a price upon coal so low as to automatically prevent the excess production, thus leaving unprovided for the increased consumption necessitated by war conditions. Far-sighted coal operators stood aghast at this order, and in patriotic approval hoped for better results than their judgment believed possible. The coal industry was unorganized. Perhaps someone, from the national viewpoint, could solve a problem which individual operators by themselves had been unable to meet. At any rate, the effective power of the nation required of them complete approval. The internal dissensions of Russia, which have made her entirely ineffective in the present great war crisis, seems to be sufficient reason why individual interests should be disregarded and individual judgment set aside in order that a united front could be presented to the enemy.

Unfortunately, the worst misgivings are being realized, our united front is disorganized, and we are forced, although with great reluctance, to admit that our industrial machine has broken down and that new policies will be necessary in order that our united front shall be an effective fighting front. No satisfaction can be derived from the admissions which we cannot escape—that our industrial machinery has broken down; that the productivity of the nation is being curtailed by the shortage of heat and power, particularly needed because of the shortage of labor consequent upon the withdrawal of the large number of those who have joined the colors. THE MINING CONGRESS JOURNAL has consistently refrained from criticism of the Fuel Administration; it has pointed out the enormous responsibility of the Fuel Administrator and the great difficulties of his work; it has believed Dr. Garfield an honest, conscientious man, striving in a big, broad way to carry the responsibilities of his position. Nevertheless, it believes that the present coal famine is the necessary and natural result of governmental interference with the orderly conduct of the coal mining business. It believes that self-regulation is the best remedy for the ills of any industry.

FOURTEEN DAYS

OF FOOLISHNESS

Success in the prosecution of the war depends upon men and equipment, and by equipment is meant food and munitions and the transportation of these necessities to the battle line. The productive forces of this nation must work overtime in order to avoid want upon the one hand and to insure success upon the other. Not only must production go on at a great pace, but it must be on a profitable basis in order that there shall be a taxable surplus from which the extraordinary expenses of the Government may be met. In face of the great demand for increased production of all necessities, it is somewhat amazing that an order should be issued closing down two-thirds of the productive power of the United States for a period of two weeks, shutting off approximately 5 per cent of the total annual production of the United States.

The stoppage of production is justified as a necessity in order to bring relief from the pitiful conditions resulting from a misguided effort to save the public from the inevitable consequences of violation of the law of supply and demand as it relates to the price of coal. MINING CONGRESS JOURNAL has before pointed out that the difference between 5 per cent and 10 per cent of our total annual production exported to foreign countries means the difference between hard times and flush industrial times—the difference between having all labor employed at remunerative wages and having 5 per cent of the country's wage-earners seeking the jobs of the other 95 per cent.

What is to be the increased cost to people already burdened with enormous prices, and what is to be the effect upon our ability to supply the armies at the front when this amazing order has taken from the competitive markets of the country 5 per cent of its total annual production?

George H. Cushing, editor of the Black Diamond, of Chicago, in giving his testimony before the Manufacturers' Committee of the United States Senate upon the coal situation, testified that a 1 per

cent shortage of coal meant an increase of 5 cents per ton in the price; a 2 per cent shortage effects a change of 15 cents per ton; a 3 per cent shortage a 50-cent increase in the price of a ton of coal, and a 4 per cent shortage resulted in a runaway market.

Senator Reed has estimated that the fourteen days idleness would cost the American people \$1,500,000,000 in wages and profits. This would amount to \$3 per ton upon the total annual coal production of the United States.

The difference between the Lane-Peabody plan and the Baker-Colver plan was \$1 per ton, or one-third of the loss which must be borne by people who do not get the coal which they are forced to pay for.

Someone must pay for the nation's fourteen days' idleness. It is estimated that the saving of coal will approximate 10,000,000 tons. This coal will cost the nation not less than \$150 per ton. No price is too high to pay for coal if the nation needs it. Any price is too high to pay for foolishness.

A MINERAL DICTATORSHIP

The marvelous growth of this great nation has been accomplished through the individual effort of its people, each being given full liberty within a certain sphere and required to excel his neighbor either in excellence or efficiency of production, in order that he might in fair competition control a market in which others producing similar goods were striving to gain public favor. This system has developed machinery which has resulted in giving to all of our people more of luxury, more of convenience, more of educational opportunity, more of leisure, more of all of those things which are considered desirable in human life than have ever been obtained by any other people in the history of the world. The only instance in which this system has failed to produce an efficiency adequate to all demands is in the matter of transportation. Its failure is plainly traceable to official interference growing out of a well-intentioned public control, based upon a public sentiment created by muckraking publicity. This failure to

distinguish between a just control which left a satisfactory margin of profit and an unduly restrictive control which prevented investment is responsible for the failure to keep transportation facilities abreast with the increasing demand for public service. With the exception of transportation, every other line of business in this country has met the public demand. A shortage of supply in any particular brought an increase in price, which immediately stimulated greater production. These were the conditions at the beginning of the war.

Coal was the one necessity in which productive facilities were largely in excess of possible consumption. It was the one business more entirely misunderstood by the public than any other. It had ample facilities to meet every possible demand for consumption for usual business purposes, to meet the increased service required by the war, and to provide our allies with more fuel than our seagoing service was able to deliver. Instead of leaving this situation to be met by natural competition, governmental interference was undertaken, the foolish policy of price-fixing adopted, a fuel dictator appointed, and other machinery was created calculated to produce the present coal famine. And now the Fuel Administration is frantically adding to the confusion by giving priority orders, filling one vacuum by creating several others, each in turn to be filled by creating other deficits in geometrical ratio. Coal operators rushed to Washington to secure some modification of orders making it impossible for them to supply customers' needs, and customers rushed to Washington, hoping, through the new business machine, to secure something like the service previously rendered.

We have the pitiful spectacle of a few men, ignorant of the business of coal production, undertaking to patch out and repair a marvelously constructed piece of machinery, into which, when in motion, some idiotic reformer had thrown a monkey-wrench. As a result, the most vital need of the nation in the prosecution of the war, the most vital need of the nation in the conduct of its ordinary business, the most vital need of the

nation for the comfort of its citizens—coal—is not available to meet the requirements of the day.

And then an oil dictator is appointed. Mr. Mark L. Requa is a splendid gentleman. With priority order calling for full production of war material, steel mills are idle, so that casing for oil development was practically unobtainable, production began to fall, and the same old monkey-wrench thrown into the machinery by the idiotic reformer has so shut out oil development and production as apparently to make necessary the appointment of an oil dictator. We trust that he will be more successful than has Dr. Garfield in handling the coal situation. And now it is proposed to give us a general mineral dictator, authorizing the President—

To requisition and take over, as a going concern, for use or operation by the Government, such mineral land or deposits, mine, smeltery, plant, factory, business, and all appurtenances thereof belonging to such producer, manufacturer or dealer, and to develop, operate or cause the same to be developed or operated in such manner and through such agencies as he may direct.

The plan for a mineral director grows out of the fact that certain of the rare minerals are being imported from foreign countries while our domestic supplies cannot be worked at the market price. The idea of stimulating the production of these minerals by Government contracts extending long enough to justify the development of these properties was worthy of the highest commendation. That a mineral dictatorship shall be created to meet this situation, with power to throw a monkey-wrench into machinery already developed to meet public requirements, is not a proposition which will meet the approval of the mining men of the country, and is as certain to prove disastrous as was the plan of the Administration for controlling the fuel supply. The principle is wrong and cannot be applied successfully. Better seek to accomplish the good in the plan by intelligent methods. Until the damage occasioned by the interference with coal and transportation can be remedied, the country will look aghast at efforts to experi-

ment with any other branch of business so long as it is meeting public requirements.

PRICE, THE FINAL DICTATOR OF PRODUCTION.

"We taste the spices of Arabia, but do not feel the scorching sun which brings them forth."

The above inscription in the rotunda of the Congressional Library, in Washington, carries a world of philosophy, neglect of which is responsible for the most serious conditions in which the United States now finds itself. The machinery of production, distribution and exchange, the machinery which brings to our table from remote foreign countries the luxuries which would be otherwise unobtainable has been developed by the unconscious genius of the ages.

This machinery is incomprehensible to the human mind, as incomprehensible as the law which governs the growth of vegetable life:

"Thou cans't not see the grass grow,
How sharp so'er thou be,
But that the grass does grow
Thou very soon shalt see."

We do know the rays of sunlight are necessary to set in motion the wonderful growing force of nature. We do know that price is the inspiring motive of production, transportation and exchange.

Through this vast incomprehensible system individuals seek a profit on business transactions. Whenever the consumer is unable to pay his share of the cost of creating by wholesale and distributing by retail these luxuries, the machinery naturally and necessarily ceases to operate. Except in the case of monopolistic control, no other incentive than price will so surely make available the luxuries and necessities of living at a reasonable and fair price. If the price is too low, production stops; if the price is too high, the promise of an extraordinary profit immediately induces others to enter into competition, and prices are automatically reduced to a point where profits and prices are again reasonable. In order to insure a large production of

wheat during the coming year, the Government very wisely and very properly fixed a minimum price, guaranteeing to the farmer that overproductions would not prevent him from making a profit upon his operation.

Price may not absolutely control wheat production, but there is no question but that it will stimulate the largest possible effort in this behalf, and, given proper weather conditions, the wheat crop of 1918 will be the greatest in the history of this country. A minimum price is guaranteed, and the farmer is left to sell his wheat at the market price should this be in excess of the price fixed by the Government.

Exactly the opposite course was taken with reference to coal production. Coal is an absolute necessity and for which there is no adequate substitute. There was need for a 20 per cent increase in the usual production of coal. To insure this increase in production, a maximum price was fixed below the cost of production in mines producing more than 25 per cent of the coal in the country. If the cost of bituminous coal production was uniform in all of the country's mines, it would then be possible to fix a price which would stimulate production in all of the mines without granting any extraordinary profit to those mines where the cost of production is at the minimum. It is evident that a mine with a large vein of clean coal, with its operation close to the shaft, with its underground hauling and ventilation costs at the minimum, may make an inordinate profit at one time, when, perhaps, that same mine, with its workings thousands of feet from the bottom of the shaft and carrying the cost of keeping ventilated a large area of worked-out ground, might be producing at exact cost, and another mine, under similar conditions, except having a narrow seam, might not be able at the market price to produce at all.

These varying conditions, if prices were to be interfered with, should have pointed out the importance of fixing a maximum price which would permit all of the mines necessary to meet the public need to operate at a profit. The fail-

ure to do this is directly responsible for the present coal famine. It is true that a lack of transportation had to do with the situation; it is true that a failure to purchase coal when it was available because of a promise that coal would be cheaper at a later date, had its influence and that various other agencies have interfered. The one cause certain to produce the present result was the fixing of a maximum price below the cost of production in the more expensively operated mines.

Competition in coal production would have met the price question much easier than it is now possible to meet a coal shortage. Price is ridiculously unimportant in the face of famine.

MINERS IN CONVENTION RATIFY WASHINGTON WAGE AGREEMENT

The United Mine Workers of America, in session at Indianapolis, Ind., by an overwhelming vote ratified the Washington wage agreement. Under this agreement both mine workers and mine operators are subject to pecuniary penalty for any diminution of coal production due to labor difficulties.

Fuel Administrator Garfield sent the following telegram to John P. White, of the Fuel Administration, in attendance at the convention:

"Please express to convention my sincere appreciation of their action in ratifying, by overwhelming vote, the Washington agreement, thus confirming assurance given to President Wilson last November that miners would take this step as practical means of assuring uninterrupted work at mines. By this vote mine workers have proved their understanding of present crisis and have responded most patriotically."

Time Extended

The provisions of T. D. 2615, December 13, 1917, extending the time to February 1, 1918, to corporations filing returns for war income and war excess profits taxes, pursuant to the Act of October 3, 1917, on the basis of a fiscal year ended on the last day of some month during the year 1917 (except December 31, 1917), are hereby amended so as to extend the time of filing such returns until March 1, 1918. This extension applies also to returns of annual net income of such corporations which were due subsequent to October 16, 1917, the date of T. D. 2516 (extending the time to January 1, 1918), but prior to March 1, 1918.



Harris & Ewing

J. D. A. MORROW
New Manager of Coal Distribution

TOLOVANA DISTRICT OF ALASKA HAS GOLD OUTPUT OF \$700,000

Some general features of the Tolovana district of Alaska are recounted by J. B. White, Jr., of the staff of the Geological Survey, as follows:

"At Livengood, as in every new mining camp, attention has first been directed to the mineral deposits most easily and cheaply won—in this camp the gold placers. Only the older and richer auriferous bench gravels have so far been mined. The present stream gravels may later prove worthy of attention.

In 1916 twenty-one plants were engaged in mining the bench gravels of Livengood Creek, and one in mining the creek gravels. These operations were carried on by underground mining. On Gertrude, Ruth, Lillian, and Olive creeks five small plants were engaged in open-cut mining, and four other plants were planning to begin operation late in the season or early in 1917. In all, twenty-seven plants were operated, compared with ten operated in 1915. The value of the gold produced in 1916 is estimated at \$700,000, compared with a production of \$80,000 in 1915.

Development work has been attempted on one gold lode prospect, but little has yet been accomplished.

MORROW NAMED MANAGER OF COAL DISTRIBUTION

Secretary of National Coal Association Named by Fuel Administration to Look After All Apportionments

The United States Fuel Administration, on January 24, announced the appointment of J. D. A. Morrow to be Manager of Apportionment and Distribution. This appointment was in accordance with the general plan of centralizing the authority and lines of report at headquarters. It is intended to facilitate the introduction of the new plan of partial decentralization of apportionment and distribution without overburdening the present organization.

Mr. Morrow has general charge of the apportionment and distribution, from producer to consumer, of all fuel except petroleum. He will supervise all budgeting and statistical work, as well as pools and other transportation matters. He and the bureaus reporting to him have no connection with the fixing of operator's base prices or retail prices, nor has he authority or supervision over State administrators on matters other than apportionment and distribution.

Mr. Morrow has been assistant secretary of the Federal Trade Commission, commissioner of the Pittsburgh Coal Producers Association, and recently general secretary of the National Coal Association, representing the bituminous coal operators of the country.

Explains Wage Situation

The United States Fuel Administration, January 25, issued the following statement: "On October 26, 1917, the United States Fuel Administrator, H. A. Garfield, wrote a letter to the President of the United States in reference to a proposed increase in the wages of mine workers in bituminous fields. On October 27, 1917, the President of the United States issued an order granting an increase amounting to 45 cents per ton in such wages.

"It has now been brought to the attention of the Fuel Administrator that consumers having contracts for the purchase of coal, made before August 21, 1917, at prices below the President's prices, have been notified that this letter and this order put upon them the obligation to add to the price named in such contracts, the 45 cents increase specified in this order of the President, although the contracts contained no provision for a variation in price to correspond with changes in wage scale. This is not correct. Neither this Executive Order nor Mr. Garfield's letter in any degree lessens or affects the obligation of the vendor named in contracts which contain no such clause, to make deliveries under these contracts at the prices named therein."

WESTERN STATES PLAN TO RAISE \$27,000 FUND

Governor Boyle Points Out Need for Active Representation in Washington of Metal Mining and Oil Interests

Metal mining and oil producing states are to take a more active part in the affairs of the American Mining Congress. Representatives of a number of Western States gathered in Denver recently and had a heart-to-heart talk with regard to the American Mining Congress and its work. As a consequence, it was resolved: "That a contribution of \$3,000 be apportioned to each of the following States: Arizona, Nevada, Idaho, Montana, Colorado, Utah, California, Wyoming, and Oklahoma. This sum is to be raised by each state under whatever plan may seem most advisable and practicable." This contribution is to be turned over to the American Mining Congress for the forwarding of its work. The object of the conference is set forth concisely in the remarks of Governor Boyle, of Nevada, made on that occasion. His remarks in full follow:

"I have been asked by Mr. Burns, and the duty is a pleasant one, to say a word relative to the work of the American Mining Congress in Washington, but before proceeding with that I desire to say that it was my misfortune to be absent this morning when a most commendatory and flattering resolution endorsing my capable service was adopted by this body. I feel under obligations to you that I am illly prepared to express, but you have my assurance that if anything I have been able to do in the past has been of service to you that my services are in the future at your disposal; that anything I can do of any consequence legitimately for the mining industry—and industry in which I was raised, and an industry in which I have something more than a sentimental interest—I shall be only too glad to do.

"Now, regarding the work of the American Mining Congress in Washington, I desire to say that I am not a member of the Congress, or I was not a member. I am glad to say I have enrolled recently. I was among those who believed that its utility to Western mining interests was not as high as it should be, but after my arrival in Washington, where I went on this silver business, it was my good fortune to be called into a conference there that had to do with direct problems of the Western metal miner, and these problems were handled through the office of the American Mining Congress, and by a gentleman who must be known more intimately to you than he is to me. That man is working under pressure in Washington at this time that no man should be required to work under. He has an inadequate working force, he has an inadequate apparatus to carry on the big work which he is undertaking at the present time, and he is doing everything a human being

could do to secure discussion of the problems of the Western miner, and to bring uniform presentations of the cases of the miners to those various departments in the Congress of the United States which the occasion requires. And I want to say in that connection, to repeat something you have heard on the floor this morning from some of your local senators, that the principal trouble with the mining industry today in the securing of the legislation so vital to its needs, is the inability of its members to get together in a constructive program which may be presented to those in authority for adoption. I believe that one of the most pathetic and ineffectual campaigns that I have ever witnessed was the campaign which was on during my month in Washington, and which is on today, looking to securing remedial legislation in the matter of the excess profits tax. The trouble with the average mining man is that he is an individualist. He believes in his own theories, and he believes so thoroughly in them that he is not willing to listen to the other fellow's viewpoint, at least until he has presented his own. As a result of that situation there has been presented to the Advisory Commission, assisting Mr. Roper, of the Treasury Department, in his efforts to make something out of this tangled mess, about ten thousand separate and distinct propositions looking to the curing of the defects in the excess profits tax act, and during the time I was in Washington we met every day, every morning, and every afternoon, when I was not engaged on this particular silver business I went there for, in listening to the unusual views of men who came in there every day to suggest remedies, and everyone of them was, when you got right down to the bottom of the situation, holding in view only the manner in which the legislation would affect his particular industry.

"Now, Mr. Callbreath, of the American Mining Congress, was on the ground when this bill was passed. Personally I have documentary evidence in my own office that he was alive to the situation that existed at that time, and that he was endeavoring then to secure a uniform presentation of the case of the Western metal miner to Congress. Congress, as an actual fact, heard nothing of the proposition until the bill was passed. When it was passed, and when the miners began figuring out their profits by the graphite method, and they discovered that many of them were going to be injured and injured seriously, they came back to Washington, or sent representatives to Washington, who went there, in many instances, with no consideration of the fundamental principles which should underlie a basic system of taxation, but proposing some scheme which might, in their judgment, relieve their particular industry from the burdensome provisions of the tax as it now stands. I want to say that after about three weeks' work on this proposition I can bring back to you the very discouraging assurance that you cannot hope for any

correction in that legislation until you come there with a definite plan, and that you cannot hope for any correction in that legislation until the plan you propose is the sort of plan which patriotic Americans should, in this crisis, propose to their government. You must take into consideration the fact that the mines will be required to pay a fair tax. The Government does not desire any more than a fair tax from them—a tax fairly equalized with the tax which will be imposed on the other industries of the country, but no proposition has yet been submitted to the Government of the United States which proposed a fair tax on the mining industry, and until such a proposition is presented, it seems very doubtful to me that you will have any expectation—should entertain any expectation of relief.

"Now in this connection the necessity for some representation in Washington that can take care of the quasi political questions arising in the mining industry must be apparent to all of you. I believe conscientiously that that organization which now exists in Mr. Callbreath's office is the organization which, properly strengthened and supported, will do for you all those things which have to be done at the present time, and in continuously increasing numbers in the future. Legislation that may seriously threaten the very existence of your industry is apt to come up. Matters of departmental ruling will be coming up there every day, and you must have representation in Washington to care for this matter, and you must have representation that is found outside of the very busy department heads of your representatives in the Congress. It gives me a great deal of pleasure to be able to testify to the very valuable service of the American Mining Congress in Washington, and you should strengthen that arm to the extent that the service it requires may be an adequate service. Mr. Burns has asked me to read you a statement or resolution which explains the needs of the Congress at this time. Mr. Callbreath says he desires two additional assistants during the session of Congress at \$300 per month for each for ten months—\$6,000; one permanent man at \$3,000 per year, two stenographers at \$100 per month each—\$2,400; extra help, extra office space, telegrams, postage, publicity, etc., approximately \$5,000. He should have about \$20,000 to guarantee the greatest possible results. I don't know where you could spend \$20,000 to better advantage to the industry at this time than in the manner which has just been presented to you, and I believe that the little quarrels which exist, or have existed, between the Mining Congress, with its peculiar political function to perform at this time, and the local state organizations, organized to take care of a different phase of the mining problem, should be sunk, at least, for the period of the war, and I thank you very much for hearing from me on this point, and I trust you will recognize my statement is a most sincere one—a

statement which is the outgrowth of my personal observation of the activities of Mr. Callbreath and his department in Washington, and of the work that that department has been doing, hampered as it is, in the interests of the industry which we all here represent today. I thank you."

Those present at the conference were:

Nevada.—Honorable Emmett D. Boyle, Governor; Henry M. Rives, Secretary, Nevada Mine Operators Association.

Idaho.—Honorable E. I. Rockwell, Bellevue; Jerome J. Day, Wallace; Eugene R. Day, Wallace; James M. McCarthy, Wallace; A. E. Carlson, Boise; R. M. Bell, State Mining Inspector, Boise.

Utah.—John J. Mullen, director, Welfare Department, Utah Copper Company; Fred Reedmond, silver and copper producer, Salt Lake; Walter Fitch, and Cecil Fitch, his son, of Eureka, Utah.

Montana.—Dr. T. A. Gregg, of the Beaverhead-Alberta Oil and Gas Co., at Butte.

Washington.—Francis A. Thompson, dean of the School of Mines at Moscow, Idaho, delegate from the Northwest Mining Association.

Wyoming.—A. I. Hetherington, Riverton; O. A. Parker, Kaycee; R. G. Taylor, Casper; Dr. John A. Leeper, Ivan S. Jones, Kemmerer; W. S. Kahl, Kemmerer; Frank G. Curtis, Casper.

One of the resolutions adopted at the general conference of mining men held in Denver January 22, 23 and 24, is as follows:

"Whereas we are reliably informed that the Government for the purpose of settlement of adverse trade balances for the assistance of our Allies and for other urgent governmental needs has in contemplation the introduction of a bill providing for the withdrawal of a considerable part of the reserve of silver now standing behind United States silver certificates in circulation and the temporary withdrawal of the said certificates under a plan whereby the Government proposes purchasing silver at the fixed price of one dollar per ounce for its immediate needs, and for the replacement of silver so withdrawn from the Treasury until the silver withdrawn as hereinbefore stated shall have been completely replaced, and

"Whereas it is the desire of the silver miners of the West to cooperate with the Government in any plan which at this time may be found necessary to the successful conduct of the war, having in mind, however, that the real interests of the Government will not be served unless the prices fixed for the products of its mines be sufficiently high to maintain production to that point where the present and future needs of the nation and its Allies will be properly cared for.

"Therefore be it resolved, That this conference of The Colorado Metal Mining Association and Colorado Chapter of The American Mining Congress, together with the delegates from the mining organizations of Utah, Idaho, Montana, Washington, Nevada, and Wyoming, held in Denver on the 22d, 23d

and 24th days of January, 1918, does hereby endorse the proposed plan of the Government hereinbefore stated, and pledges its cooperation in securing such legislation as may be necessary to make the said plan effective, and

"Resolved Further, That a copy of this resolution be forwarded to Mr. J. F. Callbreath, secretary of The American Mining Congress, Washington, D. C., with instructions to bring the same to the attention of those who may be instrumental in its accomplishment."

The Utah Chapter's resolution on the silver question is as follows:

"Whereas on or about the 14th day of November, 1917, there appeared in the newspapers, as an Associated Press report, a short item to the effect that the National Government contemplated the fixing of the price of silver at about 86 cents per ounce, and restricting the free and general export of this commodity; and

"Whereas this item attracted the attention of His Excellency, Governor Emmett D. Boyle, of Nevada, who, recognizing the importance of increased silver production as essential to the successful prosecution of the war, and the economic effect such action would have on the welfare of the nation and its Allies, and particularly the silver producing states of the West, immediately summoned for conference a number of the silver producers of the State of Nevada, and communicated by telegraph with the executives of other western states, notably Utah, Idaho, California, Oregon, Washington, Montana, Wyoming, New Mexico, Arizona, and Colorado; and

"Whereas at the meeting of the silver producers of Nevada Governor Boyle was delegated to go to Washington and present the case not only for the silver producers of Nevada, but for the silver producers of all the western states; and

"Whereas the executives of the western states, and the mining interests of the western country generally, responded to Governor Boyle's appeal and cooperated with alacrity, sending strong delegations to Washington; and

"Whereas at the various conferences held in Washington with the Federal officials Governor Boyle demonstrated such a precise grasp of the situation, and such a broad knowledge of the facts, coupled with so aggressive and efficient an attitude, that, by common consent, he was made the spokesman, not only for Nevada, but for the entire aggregation of interests affected; and

"Whereas the presentation of the engineering, economic, and social features of the case was led by Governor Boyle who demonstrated the essential wisdom and necessity of making a \$1 price on silver, which would provide for the placing of silver on a sufficiently reasonable basis to discharge our debit balances on trades with the Orient; and

"Whereas the arguments and conclusions were committed in the form of a memorandum for Congressional enactment, and have subsequently taken the form of a bill in extenso, which, we are informed, is acceptable to the

Treasury Department and all concerned, and will shortly be introduced in Congress; now, therefore

"Be It Resolved, That the Utah Chapter of the American Mining Congress takes this means of expressing its hearty appreciation of the inestimable service performed by Governor Emmett D. Boyle in his initiation of and leadership in the movement to bring silver to its proper place as a wealth producing mineral of the western states, and expresses the firm and unqualified conviction that the nation is his debtor for this contribution to the revival of silver production; and

"Be It Further Resolved, That the secretary be, and he hereby is, directed to spread this resolution, in full, upon the minutes of this meeting, and that he prepare and forward a copy hereof, signed by the proper officer of this Chapter, and attested by the signature and seal of the secretary, to His Excellency, Governor Emmett D. Boyle, of Nevada."

Unanimously adopted by the Executive Committee of the Utah Chapter of the American Mining Congress this nineteenth day of January, A. D. 1918.

JOHN M. HAYS,
Chairman.

Attest:
MURRAY SCHICK,
Secretary.

As to the supply of certain so-called rare metals, namely: Molybdenum, Tungsten, Manganese, Chromium, Pyrites, Potash, and Nitrates, it was resolved:

(1) That we favor the encouragement by subsidy, direct and indirect, and in every other way of the production of such rare metals.

(2) That we favor the stimulation by every possible means of the production of gold and silver.

(3) That we do not favor Government control or operation of mines producing gold, silver, copper, lead, zinc, or other metal in mineral, unless a shortage should develop therein."

That copies of the resolution be sent to the secretary of the American Mining Congress, to the various state organizations represented for transmission to their respective Congressional delegations, to the members of the various House and Senate Committees concerned, to the Secretary of the Interior, and to the Director of the Bureau of Mines.

To Eliminate Power Waste

The electric railways of the country were called upon to cooperate with the United States Fuel Administration in the conservation of coal used in generating electric power in a communication issued by the War Board of the American Electric Railways Association. The Electric Railways War Board urged all electric lines to aid in carrying out suggestions recently made by the Fuel Administration to State Administrators looking toward the limitation of unnecessary uses of electric power. The communication of the Board outlined in detail the unnecessary uses of electricity which can readily be eliminated.

COAL DISTRIBUTION PLAN IS OUTLINED

Producing Fields of County Divided Into Twenty Districts—Geological Survey Helps Work Out Problem

The United States Fuel Administration has announced the appointment of E. R. Clayton, of Harlan, Ky., to be district representative of the Fuel Administration for the coal fields located in Georgia, Tennessee, and the counties of Bell, Harlan, Knox, Whitley, McCreary, and Laurel in Kentucky. Mr. Clayton is the sixth district representative named under the permanent systematic plan for the distribution of the country's bituminous coal supply, which the Fuel Administration is adopting, and which was outlined by United States Fuel Administrator Harry A. Garfield in his testimony before the Senate Committee investigating coal conditions on December 26.

The plan contemplates a system of coal distribution that will insure the speediest possible movement of coal from the mine to the consumer, and the immediate return from consuming centers to the mines of empty coal cars. It will eliminate, so far as possible, cross hauling of coal by providing for the movement of coal from the mine to the consumer along the shortest possible transportation lines.

Under the plan each state will be allotted its quota of the estimated output of bituminous coal. This allotment will be supplied from the output of certain definite producing districts. Coal for each state must move from the producing districts in which the state's allotment is located and from no others.

The producing fields of the country have been divided into some twenty districts, and a district representative will be named in each of these. These district representatives will allot equitably all orders and requests for fuel from the Fuel Administration among the various shippers and mines within his district. They will be responsible for the prompt filling of coal orders, and the prompt movement of coal out of the producing fields. They will see to it that each state receives only its authorized quota from the producing districts. All requests and orders for emergency coal, either by the Federal Fuel Administration or by State Fuel Administrators, will go through these district representatives.

The whole system of coal distribution and apportionment will be under the general direction of J. D. A. Morrow, manager of Apportionment and Distribution, working directly under United States Fuel Administrator Harry A. Garfield.

The new distribution plan, which was conceived by the Fuel Administration soon after its organization, called for an enormous amount of detail work in the establishment of temporary quotas in the coal budget for each state. This work has been progressing

for two months under tremendous pressure. Hundreds of statistical experts, under the direction of experienced coal men and transportation executives, have been at work on this problem in cooperation with the Geological Survey. It is expected that within a short time a definite announcement of the temporary quotas of the consuming states and of the producing sources from which each shall secure its supply may be made.

Representatives of the fuel administration and representatives of the railroads, named by Director General McAdoo, are now at work developing the phases of the plan which concern transportation, in order that the best results, both for the movement of coal and for transportation generally, may be secured.

The operation of the plan, so far as it has now been inaugurated, was explained to federal fuel administrators in the various states in a letter from United States Fuel Administrator Garfield. The latter, announcing the appointment of district representatives in several districts, said:

"As soon as district representatives are appointed, all State Administrators who may call upon them will be notified. Individual shippers and mines within those districts for which district representatives have been appointed will be notified to refer any orders or requests for shipment of coal made upon them by any member of the United States Fuel Administration to the proper district representative. State administrators accordingly should direct all emergency requests for fuel to the district representative in charge of the particular coal field from which the relief is to be obtained, rather than to an individual operator within that district. This will prevent shippers from receiving conflicting orders from different members of the Fuel Administration, and will insure more prompt attention to such requests because of their being made in the field by a man thoroughly conversant with the local situation and the available supply. No emergency requests should be made directly to Washington by state administrators unless the proper district representative has been unable to supply the necessary coal."

"In order that the bituminous coal supply of the country may be apportioned equitably among the different states, and among the various consumers in each state according to the relative importance of their needs, it is necessary that the work of the Fuel Administration in regard to the apportionment and distribution of bituminous coal be not limited to the relieving of emergency shortages. Accordingly, the available coal production of the country is to be apportioned among the various states, based upon previous consumption and the changes resulting from the entrance of the United States into the war. In order that cross hauling may be reduced to a minimum, and that each state may receive coals adapted to its needs, the particular fields from which each state shall draw its supply will be designated (by-product and gas coal

excepted). When this budget is complete, the consumers of each state will be notified through the press that their coal must be obtained from certain specified fields. Producers will then be allowed to ship only to consumers in the states designated, and jobbers will be required to observe the same rules. In other respects the normal distribution of coal will go on without interference.

State administrators, as soon as the tentative apportionment is complete, will be informed as to the particular fields upon which they may call for coal, and the quantities they may secure from each. When a state is currently receiving its full allotment of coal, all further needs must be met by reducing the quantity supplied to other consumers in that state. District representatives will be instructed to comply with any requests for coal made by designated state administrators up to the amount allotted to their respective states. Should any state have a demand for coal in excess of its allotment, this excess will have to be taken care of by a curtailment of consumption, unless a temporary or permanent readjustment of the allotment be made by Washington.

"The foregoing is a part of the new plan, details of which are being worked out as rapidly as possible, and will be announced to you as soon as they can be perfected. It should be clearly understood that it is not intended that the rights and duties of the state fuel administrators shall be lessened in any respect. On the contrary, the state administrators will retain all of their present responsibilities. The purpose of the plan is to facilitate the handling of emergencies and to define the limitation of supply. The only changes are in the creation of a new office in the field which will aid state administrators in promptly relieving emergency shortages, in reducing the number of cases which must be referred to Washington, and in making provision for insuring that each state will receive its proper *proportion* of the available coal supply. In all other respects, state administrators will continue to keep in touch with Washington as heretofore."

Mines Not Slowed Down

Fuel Administrator Garfield sent the following telegram to John P. White, while he was in attendance on the Miners' Convention, at Indianapolis, Ind.:

"Please state that order closing industries for five days will not slow down mines. I am making provision for that, and also include in my appeal request that labor be not allowed to suffer during five days or subsequent Mondays affected by order. I feel confident great mass of employers throughout country will regard this as necessary incident of the war to be borne by them, and not shifted to labor."

C. F. CLAY HEADS OIL SECTION OF NEW COLORADO CHAPTER

At the meeting held January 15, to complete the organization of the Oil Section of the Colorado Chapter of the American Mining Congress, C. F. Clay was elected chairman; T. A. Van Tilborg, vice-chairman; Frank E. Kistler, treasurer; and M. B. Tomblin, secretary. Executive committee: C. F. Clay, R. S. Ellison, F. W. Freeman, George L. Nye, L. A. Van Tilborg, F. E. Kistler, and W. A. Matlock.

Article eight (8) of the By-Laws adopted, provides that "The dues of members of the Section shall be \$12 per year—payable semi-annually in advance—in the months of January and July."

These dues are for the support of the Oil Section of the Chapter since the initial entrance fee and annual dues paid to the American Mining Congress are retained in whole by the national organization at Washington for its support.

Bunker Situation Clearing Up

Reports to the United States Fuel Administration indicate that the fuel situation has been completely relieved insofar as it affects the bunkering of ships carrying supplies to American forces abroad, and to the nations associated with the United States in the war. At northern Atlantic ports, on January 25, there were but forty-four vessels waiting. All of these were receiving their bunkers as rapidly as the coal could be put aboard. Less than thirty vessels were waiting for bunkers at southern ports.

Approximately 350,000 tons of bunker coal, on that date, were en route for northern Atlantic ports. The Fuel Administration believes that this movement will enable the Administration to keep abreast of the bunker situation. Approximately the same amount of coal was moving to southern ports.

More Cement Made

The year 1917 holds the record for production of Portland cement, a total of approximately 93,554,000 barrels having been manufactured, an excess over the former high production of 1913 of nearly 1,500,000 barrels, and over the production of 1916 of more than 2,000,000 barrels, or 22 per cent. The shipments in 1917 of approximately 90,630,000 barrels fell below those of the record year, 1916, by nearly 4,000,000 barrels, or about 4 per cent. Stocks at mills increased more than 2,800,000 barrels, or 33.7 per cent, as compared with 1916.

Higher prices for cement prevailed throughout the United States except at a few plants in the Pacific Coast district. Higher prices were, however, accompanied by higher costs of manufacture. Demand for cement was generally very good during the first five to eight months of 1917, but showed a decided falling off during the remainder of the year. Labor and traffic conditions were, for the most part, unsatisfactory.

West Virginia Operators Planning State Chapter with Handsome Club House to be Located in One of the Larger Cities of the State

A handsome clubhouse to be located in one of the larger cities of West Virginia is planned by several leading mining operators of the state who have recently come into the membership of the American Mining Congress.

This state chapter, it is pointed out, will bring together all mining men of the state, and will make as formidable an organization of the kind as to be found in the country.

Already a large portion of the leaders of the industry within the state have come into the American Mining Congress following a series of conferences which William M. Conrad, assistant secretary of the Congress, held with them during December and January, and it is expected that all will give their hearty support to the project now in hand for the headquarters club which it is planned to model after the Engineers Club of New York and the Merchants Club of Philadelphia.

Walter Prockter, of the Prockter Coal Company at Amherstdale, W. Va., and one of the most prominent operators in the Guyan Valley Field, is given the credit for originating the idea for the clubhouse feature, and leaders of the American Mining Congress have given their hearty sanction to the project.

In connection with the clubhouse it is proposed to have an exhibit of mining supplies which will be permanent, and will doubtless be located in a separate building. Here the large manufacturing companies will be invited to exhibit their products for the inspection of the mining men of the state, and thus a splendid revenue will be derived by the club, while, at the same time, the operators will be greatly aided by the personal inspection of samples of supplies at all times.

All of the conveniences of such a club as is planned will be afforded in the building. There will be a central lounging room, library, parlors, dining rooms and offices on the first floor, while on the second floor there will be an assembly room which can be used for meetings of operators, bringing together several hundred persons, as well as sleeping rooms for the accommodation of the members.

Mining men from all parts of the country will be welcomed to the clubhouse, and the thought of the originators of the idea is that a real clearing house for operators and others interested in the industry, such as bankers and other backers of mining projects, will be the result of their labors.

At the present time the West Virginia Coal Operators Association, with headquarters at Huntington, has just dissolved, and the lead-

ers of the movement for the West Virginia State Chapter declare that the time is now ripe for the newly planned organization.

They point out that the present membership of the American Mining Congress in the state embraces the leading men in all parts of the state, and particularly in the Fairmont-Clarksburg, Guyan Valley, Kanawha, and New River fields, and with such a splendid nucleus as a start, success would seem but a matter of pushing the project.

George T. Watson, vice-president of the Consolidation Coal Company at Fairmont, has been one of the leading workers of the Congress for a number of years, during which he has participated in much notable effort for the advancement of the industry, it is pointed out, and his interest in all matters of the Congress has served to advance its projects splendidly.

Another leader in the industry in the state is President C. H. Jenkins, of the Central West Virginia Coal Operators Association at Fairmont, and a prominent member of the Congress, whose aid for the new project in hand is to be sought.

President A. R. Beisel, of the Guyan Valley Coal Operators Association, is also affiliated with the Congress, as is J. R. Thomas, president of the Kanawha Valley Shippers Association at Charleston, and these leaders will also be seen and their aid enlisted in the movement.

Recent members of the Congress in West Virginia who are expected to participate in the work for the new state chapter, include Messrs. R. A. Johnston, Rolfe M. Hite, Alex. R. Watson, Samuel D. Brady, John M. Wolfe, C. D. Robinson, J. A. Clark, Harry B. Clark, J. A. Clark, Jr., J. E. Watson, Jr., and M. M. Foster, all of Fairmont; F. M. Kirk, of the Sterling Coal Company of Cleveland, Ohio, which operates the Norway mine near Fairmont; J. M. Orr, Wilsonburg, W. Va.; Charles A. Storck, of the J. B. Jenkins Coal and Coke Co., of Buffalo, which operates mines at Mabie, W. Va.; H. B. Hartley, B. M. Chaplin, and J. B. Hanford, of Morgantown; Daniel Howard, of Clarksburg; George DeBolt, of the Red Rock Fuel Co., of Buckhannon; Isaac M. Scott, and E. T. Hitchman, of Wheeling; John A. Kelly, H. E. Jones, A. J. King, Frank Enslow, and W. H. Cunningham, of Huntington; J. H. Callahan, Mt. Clare; A. J. Dalton, Omar; H. C. Jones, McNear; John Laing, H. M. Bertolet, and W. M. Puckett, of Charleston.

COAL HEARING BRINGS OUT LITTLE NEW DATA

Many Testify Before Senate Investigating Committee—Both Operators and Miners Patriotic, Says Dr. Garfield.

While no great amount of information, not already known, was brought out by the Senate Committee investigating coal matters, it placed in readily accessible form much valuable data. Some extracts from the hearing follow:

Senator VARDAMAN. And the man who would take advantage of this emergency to make money ought to be restrained by that strong autocratic hand. Now the President has the power, and he ought to lay it on that individual who has not any more patriotism than a Gila monster.

Dr. GARFIELD. Well, Senator, I hope that nothing I have said would lead you to believe that I have found, either among the operators or among the mine owners, an unpatriotic disposition toward the sentiment you have just expressed.

Senator VARDAMAN. I know you have not, Doctor, and I realize that you have a very difficult problem to solve. I sympathize with you and I want to help you. But I do understand you to say, and I understand it to be the result of your investigations, that in every instance you have been forced to pay these men in order to get sufficient coal to meet the demands of the people.

Senator KENYON. To permit them a large profit.

Senator VARDAMAN. To permit them a large profit.

Dr. GARFIELD. Yes. I should object to employing the words "I have been forced to do it" if it is meant by that that the mines would have closed.

Senator VARDAMAN. I mean, circumstances forced you.

Senator KENYON. Would the mines have closed?

Dr. GARFIELD. The mines would not have closed. Men have said to me over and over again, when they have brought in their petitions: "If it is the purpose of the Government to require us, in view of the war, to operate at cost we will operate at cost and ask no profit; but we understand the Congress to have said that we are to have a fair profit, and under those circumstances we come to you with our cost sheets and show you that we are operating now at or below cost;" and I have, of my own free motion and because I understood it to be the law expressed in the bill, so far as it rested upon me, authorized a price that would include a fair profit, as the Lever Act says.

Senator VARDAMAN. Nobody objects to that.

Dr. GARFIELD. That is all that I have done, and all that they have at any time expressed to me as the thing I was expected to do.

Senator JONES. Doctor, while undoubtedly

you have had many patriotic offers of operating concerns to operate at cost without any profit, if necessary, and if asked to do it, have you had any offers of new capital to go into the coal mining industry and operate at cost?

Dr. GARFIELD. They would not come to me, would they, Senator? I have not received them, because—

Senator JONES. Have you heard of any?

Dr. GARFIELD. In other words, have I heard of new mines being opened up?

Senator JONES. For the purpose of operating at cost.

Dr. GARFIELD. No.

Senator JONES. So, while patriotism might be a sufficient incentive for citizens who are already engaged in the industry to operate at cost or a low profit, yet there has been no evidence that patriotism alone would be a sufficient inducement to get new capital to go into the speeding-up of operating concerns, or the opening of new ones? You have not heard of any instances of that kind, have you?

Dr. GARFIELD. Very few. Some few new operations have been opened that I have heard about.

Senator JONES. For the purpose of operating at cost?

Dr. GARFIELD. No; no.

Senator JONES. Then, in order to get the increased production it will be necessary to offer a financial inducement under the existing system, in your opinion, will it not?

Dr. GARFIELD. I think the prices established do offer a sufficient profit, Senator, to encourage all necessary operations.

Senator JONES. At any rate, that was your purpose in fixing the price which has been fixed?

Dr. GARFIELD. Yes.

Senator JONES. I am just informed that the newspapers of the country are stating that it is the purpose of the Coal Administration to purchase all of the coal produced within these five days, and pay for it out of the public treasury. Can you give us any information as to the verity of that rumor?

Dr. GARFIELD. That is an exaggeration of this, which is true: If it becomes necessary to keep the mines going, I would set up as a revolving fund permitted under the Lever Act, a sufficient amount to buy on thirty-day sight drafts, accepted by State fuel administrators, coal that would be sent forward for other than the preferred list, purchasing that coal at the President's price, and selling it for cash at the President's price, without profit. That transaction would be for the purpose of controlling coal which is distributed for other than the preferred list of things, so as to divert it the more easily for people who are cold, and for ships which need bunkers, and for public utilities, etc. And if there is a surplus over, then to control the distribution so that it shall not be unfairly taken. I doubt very much if there will be any necessity for the use of that piece of machinery.

Dr. GARFIELD. This, I see, is the situation: We produce at the present time double the amount of crude oil that can by any possibility be refined. It takes a long time to erect refineries. It therefore goes without saying that we are burning up a great lot of valuable oils, kerosene and gasoline especially, in our fuel oil that ought to be taken out before that fuel oil is burned. Some of the heavy oils yield very little return in gasoline. Nevertheless, we are burning up, I suppose, millions of dollars worth of gasoline annually that we ought to be saving if we could refine it all. I speak with the more certainty because I know so little about oil, gentlemen; but that is the way it looks to me at first glance; and I suppose that a Government agency never will be able to handle the question of fuel oil satisfactorily until it is able also to place prices on all oil products, and, if necessary, to arm the President or his agents with power to do whatever is necessary in the matter of acquiring, building, controlling, and operating pipe lines and refineries.

Dr. GARFIELD. No, sir; I did not give them authority to do that.

The CHAIRMAN. But you gave them authority to get the coal while it was on the cars, or in transit still?

Dr. GARFIELD. Before it was delivered to the final consumer. Now, this situation arose: The business interests in several sections of the country, bringing the argument to bear on the State fuel administrator, said, "We will do anything necessary to aid the Government in the present emergency, but our State ought not to be asked to do these things, and allow other States to go on with these activities," and the State fuel administrator's argument was sound. If a thing of this kind was done, it ought to be done for the same kind of reason that it ought to be done generally with the manufacturing industries.

The CHAIRMAN. It was stated, I think, on the floor of the Senate that the original intention was to have this order apply only to New York. What is the fact about that?

Dr. GARFIELD. No; I never had it in mind to have it apply only to New York. This, Senator, is the fact: Some time ago I gave to each State fuel administrator authority to divert coal when necessary to relieve human suffering, going to the extent, if necessary, of shutting down factories, closing up any kind of an institution—in short, to do anything necessary to relieve that suffering.

The CHAIRMAN. That is, to divert the coal while it was in transit?

Dr. GARFIELD. Yes; on arrival, and before it was put into the—.

The CHAIRMAN. And you did not mean to give authority to go into a factory and take the coal that was once put in there?

Dr. GARFIELD. No; I did not.

The CHAIRMAN. You did not give them authority to do that?

Senator KENYON. What was the particular trouble in Ohio that led the governor to seize the coal? Were conditions any worse in Ohio than in other States?

Dr. GARFIELD. I suspect conditions were worse in Ohio, for this reason: They were at least psychologically worse, and, I suspect, actually worse. The priority order very properly, in my judgment, sent the coal into the Northwest, where it had to go during the period when the Lakes were open, because the Northwest gets most of its coal in that way; and a good deal of coal must go into Canada every year in that way. To assure the Northwest of its supply the priority order No. 1 sent coal through Ohio very largely for the Lakes. Well, it gets on one's nerves, I can well understand, to see a coal supply going through in trainloads and not stopping and our bins empty, and the people of Ohio may well be excused for growing a bit nervous, as time went on, lest there be no end to that process and they be left without coal.

Senator JONES. What do you estimate has been the probable increased demand for coal during the war?

Dr. GARFIELD. It varies greatly. The best evidence that we have been able to secure in our office upon that point is, of course, based on statements from the manufacturing interests, and, yielding to that impulse in human nature which is in us all, they have placed their demands amply high, I suppose. Discounting that as much as we can, I still think that in some places where war material is being manufactured intensively, the increased demand ranges from 33 1/3 per cent to 50 per cent, and, of course, in isolated cases 100 per cent. Some very interesting figures have been collected and will be available for the committee, by Mr. Lesser in the Geological Survey, as a result of an inquiry from a very large number of manufacturing establishments, and that inquiry shows that the increase this year is 6 to 10 per cent—in other words, much below what I have indicated as true in certain instances, but that deals with the actual situation. It does not take into account what they would use if they could get the coal they would like to have. That deals only with the 550,000,000 tons that we shall produce, and not with the 600,000,000 tons that we ought to have produced, to meet requirements.

Senator JONES. Is it your judgment, then, that we ought to have produced about 600,000,000 tons this year?

Dr. GARFIELD. Yes.

Mr. COLVER. The Trade Commission has offered as its first suggestion its solution for the fixing of price the pooling of all the coal at varying prices and the resale at a single price. Then it would be a true average price. That would seem to have all of the equities for the producers and would result without any question in substantially lowering the price to all consumers. We do not say now or at

any time that that should have been done or might have been done, and without question when Dr. Garfield said that this was not the time to consider that because his administration came so late in the season, and so much harm had been done to the production at the time he took charge, he based that statement on complete information, and I should say that I would accept his judgment absolutely, although I do not think that mitigates at all against the equity or the fairness of the other plan when in a better season it could be applied, and I think myself that we are bound to come to it.

Senator LODGE. Does not the pooling and averaging of the price recognize the difference in the cost of mines necessarily?

Mr. COLVER. Undoubtedly that is its foundation.

Mr. COLVER. In the getting at anthracite costs, for instance, if a physical valuation were made in the anthracite field, which is very small compared with the bituminous coal field, and which is very much easier done because of the fewer number of companies, relatively, as well, we had a very carefully drawn estimate of the amount of money and labor that would be required for such a general investigation, with the idea of making once and for all a physical valuation, a complete valuation, of the anthracite industry. We found that it would require putting all the men at work that could be used economically, and with the idea of speed, too, a year's time, and the expense would have been upward of \$2,000,000—I think it was \$2,100,000, or something like that—and I will say that that estimate was scanned very carefully; I mean there were no frills in it at all; it was just a straight piece of accounting; and because it involved such a very large sum of money, far more than the commission commands, and because other things seemed to be more urgent and pressing at this time, the plan was laid aside.

Senator JONES. If I have been able to understand things that have happened in the last few days, it seems to me that one of the greatest reasons for putting the railroads of the country into Government control is for the purpose of pooling receipts so that one railroad would not be pulling at cross-purposes so as to increase its revenues as compared with the revenues of other roads, and so that its equipment might be used in the most advantageous way; and it was necessary, to do that, to pool receipts. Now, is such a thing necessary in the conduct and complete Government control of the coal output?

Mr. SNEAD. That is the remedy suggested by Mr. Colver. I do not favor the plan of absolute pooling at this time. I believe in utilizing the existing agencies for production and distribution, directed by governmental authority as to the price and as to preference in shipments, as being nearer to the law of supply and demand and to regular channels than any other plan.

Senator JONES. You are proposing to have the Government specify the price, the preference of shipment, and the place of shipment.

Mr. SNEAD. Yes.

Senator JONES. You are proposing to exercise those means and methods of control now. Does not that practically control the destiny of the coal operators?

Mr. SNEAD. It does.

Mr. COLVER. I said there was no need of any more coal mines or the opening of new mines until the coal mines that we have and the miners that we have are working to capacity. That is all I said, and I said their capacity had not been reached. Dr. Garfield spoke of 50,000,000 of tons being short, and I should say that that is a very low figure, or a very conservative figure.

Senator LODGE. Of course, a part of this plan of price fixing which has been followed was to also stimulate production?

Mr. COLVER. Yes.

Senator LODGE. It has not stimulated production sufficiently, because there are 50,000,000 tons of a deficit.

Mr. COLVER. It has stimulated it right up absolutely to the limit of transportation, and that is what stopped the whole thing.

FUEL ADMINISTRATION MAY FALL UPON COAL HOARDERS

If any shortage of domestic coal develops, it is due to the individual hoarding of coal, and may result in its redistribution by the apportionment and distribution division of the United States Fuel Administration, it has been announced officially. Continuing, the announcement says:

"The production of anthracite coal for the present year will be 10 per cent in excess of the production of 1916. The demand is also greater. Figures are not available as to the increase of production in bituminous, but the total tonnage will be in excess of last year's output.

"It would appear, therefore, that any shortage of domestic coal would show hoarding—a practice the Fuel Administration strongly discourages as being a matter difficult to deal with, and regards such action as unnecessary, unwise and unpatriotic in this emergency. If the practice is indulged in to an extent as to cause the redistribution of coal, the matter will receive prompt consideration, and such action as may be necessary to the general good will be taken.

"The Fuel Administration has information and is conducting a general inquiry in the direction of the storing of coal by industrial consumers and various manufacturing establishments.

"Through the cooperation of both shippers and consumers, the Fuel Administration hopes and believes that it will not be necessary to take drastic action in the direction of suspending shipments to such plants."

NORWAY TO SECURE CERTAIN METALS FROM U. S.

War Trade Board Makes an Arrangement Which Will Allow Exports Sufficient for Scandinavian Country's Own Needs.

The War Trade Board has issued the following statement:

During its negotiations with Dr. Fridtjof Nansen, covering a period of several months, the War Trade Board had assured him that Norway's reasonable requirements of supplies would be met. Until very recently the Board was engaged in determining the commodities and quantities the United States could spare, her own and her associates' needs, and the requirements of the other neutrals being given due consideration. A conclusion has been reached with respect to a large number of those items, and a list was handed to Dr. Nansen.

When it was found that further time would be required to obtain full information concerning the quantities of the remaining supplies needed by Norway, the Board deemed it fairer to state its willingness to furnish these commodities, the quantities to be hereafter fixed in accordance with Norway's necessities when ascertained.

The amount of lead to be exported during 1918 was fixed at 1,000 tons; the amount of tin at 80 tons; the amount of antimony at 12 tons, and the amount of asbestos at 350 tons. With regard to copper the Board says:

"The exportable surplus of copper controlled by the United States and its associates is not sufficient to meet all demands. But so far as the war needs of the United States and its associates permit, the Board will assist in every way in supplying the copper needed by Norway. The Board agrees to Norway's export of copper to the Central Powers only in compensation for copper received from those powers in manufactured form, plus 5 per cent to cover wastage. The United States cannot concede the right of Norway to export compensation copper to the Central Powers in the form of the copper contents of ores, which, with the exception of purple ore, are lean in copper but rich in sulphur. The sulphur contents of these ores greatly exceed in value their copper contents. Sulphur is a commodity of prime importance in the manufacture of explosives, and is of the greatest value as well to the United States and its associates as to the Central Powers. Its export in this form would, therefore, result in granting to the Central Powers under guise of compensation for copper, a large amount of valuable war material, which has nothing whatever to do with the principle of compensation. This Board is unwilling to permit such a result. No pyrites has, in fact, been exported by Norway to the Central Powers for a considerable period of time. The com-

pensation copper exported to the Central Powers should be in the form of crude or refined copper.

"We respectfully insist that among the products which are not to be exported to the Central Powers, are antimony, bismuth, manganese, mica, nickel, tin, titanium, wolfram, and chrome, and this includes all ores and alloys of the commodities mentioned."

RIGHT OF APPEAL MAY BE EXERCISED IN FUEL PRICE FIXING

The United States Fuel Administration has made public a regulation adopting and approving all retail prices and price margins fixed by Local Fuel Administrators and Local Fuel Committees throughout the country. The regulation was made public because of many apparent misunderstandings as to the method by means of which retail prices, fixed by local fuel officials, are finally approved by the United States Fuel Administration. A portion of the order reads:

"The Fuel Administrator hereby orders and directs that all retail prices and retail gross margins heretofore and hereafter designated by any State Fuel Administrator or by any local committee with the approval of the State Fuel Administrator, who appointed such committee, are hereby adopted and fixed by the United States Fuel Administrator as the retail price or retail gross margins for the sale of coal in the locality or by the dealers designated by such Fuel Administrator or Local Committee, subject, however, to modification either by the State Fuel Administrator making or approving the same or by the United States Fuel Administrator; and further subject to all orders, rules and regulations heretofore or hereafter issued or made by the President of the United States or the United States Fuel Administrator or by any State Fuel Administrator affecting the sale, shipment, or distribution of coal."

"And be it hereby further ordered that any one or more persons who feel aggrieved by the prices heretofore or hereafter designated by any State Fuel Administrator or by any Local Committee may appeal to the United States Fuel Administrator to have such designation of prices or gross margins modified by forwarding to the Legal Department, United States Fuel Administration, at Washington, a verified written petition setting forth in detail the facts relied upon by such petitioner, and by forwarding a copy of such petition to the State Fuel Administrator who made or approved the designation of prices or gross margins which it is sought to have modified. Pending the determination of such appeal, and until the decision of such appeal by the United States Fuel Administrator, such designated prices or gross margins shall remain in full force and effect unless otherwise ordered by the State or United States Fuel Administrator."

ALASKAN COAL FIELD IS DIVIDED INTO LEASING UNITS

Tracts Laid Out in Nenana Field Range From 160 to 1,664 Acres in Extent

Secretary Lane, of the Interior Department, announced, January 19, that the work of surveying and dividing into leasing units the more accessible part of the Nenana coal field, Alaska, has been completed, and that as soon as the data is printed the lands that have been divided into leasing blocks will be offered for lease under the provisions of the Alaska coal land leasing law, Act of October 20, 1914 (38 Stat., 741). Announcement of the offer for lease is promised in the near future when full publicity of the leasing offer will be given through the press and the leading coal trade journals.

The area to be offered comprises approximately 19,000 acres of land divided into twenty-three blocks or tracts, ranging from 160 to 1,664 acres, each block being in such form as is believed to permit the most economical mining. A lease, under the law, cannot exceed 2,560 acres, and may include one or more contiguous leasing blocks.

The lands to be offered for leasing constitute the more accessible and immediate minable part of the surveyed lands of the Nenana coal field, and are in T. 11 S., Rs. 5, 6 and 7, and T. 12 S., R. 7 W., Fairbanks Meridian. They lie in the valley of Lignite Creek, a tributary of the Nenana River, extending up the creek from its mouth for about 12 miles. The mouth of the creek is on the approved surveyed route of the Government railroad from Seward to Fairbanks, at a point about 364 miles from the coastal terminus at Seward, and about 106 miles from the inland terminus of the railroad at Fairbanks. While it is not possible to state when the railroad between Fairbanks and Seward will be finished, it is believed that the summer of 1918 will see the portion of the road completed from the coal field to Tanana River, thus making this coal available for barge shipment to Fairbanks and other river towns.

The geologists who have examined this field report that the coal occurs in many beds of various thicknesses up to thirty or thirty-five feet, there being at least twelve beds of workable thickness, of which probably at least six are over twenty feet thick. The coal-bearing rocks are only gently folded, and no intrusive rocks are known to cut them.

The coal of this field is lignite of fair grade. While it is not suitable for export, it will furnish a valuable and much needed fuel in portions of interior Alaska that are now dependent on a scanty and expensive supply of wood. The uses of Nenana coal will probably be as locomotive fuel on the Government railroad, for power and thawing at the mines in Tanana Valley, as domestic fuel in Tanana Valley, and as river-boat fuel on local Tanana

River boats, and possibly on some of the Yukon steamers. It is desirable that Nenana coal should, if possible, be used on the greater part of the railroad, rather than the higher grade Matanuska coal, because the heavy freight traffic will be northbound, leaving southbound empties available for hauling coal. The Nenana coal field is nearer the summit of the Alaska range than any known coal south of the divide.

STATE ADMINISTRATORS EXPECTED TO INSURE EQUITY IN DISTRIBUTION

State fuel administrators have been instructed by the United States Fuel Administrator that they have complete authority in their respective states to enforce the proper distribution of the coal supply at proper prices.

Under these instructions the state administrators will have full authority to make all regulations regarding local distribution. Specific authority will be conferred by the Federal Fuel Administrator in cases where orders or regulations may require enforcement by legal authority. The instructions to state administrators said, in part:

"The most important duty of the state fuel administrator is to see that the supply of fuel in his state is equitably distributed at fair prices. It is the intention of the United States Fuel Administrator to see that the state administrator is provided with the necessary authority to accomplish this result.

"The state administrator has authority to promulgate reasonable regulations regarding local distribution. He may require dealers to deliver only a limited quantity to any one customer. He may require consumers to state their supply on hand and their requirements. He may take measures to prevent hoarding. The state administrator is authorized to proceed with measures of this character, and should have no difficulty in making them effective by force of public opinion.

"In the great majority of instances the state administrator will be able by the use of his influence and with the support of public opinion to obtain action with the consent of the parties. If this is not possible, he should telegraph at once to the United States Fuel Administrator the action he recommends and request the necessary authority."

Assistance Appreciated

The general superintendent of a large coal company writes The Mining Congress, in part, as follows:

"I wish to tender our cordial thanks for your promptness and courtesy in the handling of our request and hope that the final decision rendered by the Fuel Administration will mean a fruition of our hopes.

"Your members may not be in position to ask your services more than once in several years but when they do need such services they need them as the Texan needed his gun."

**THE
MINING CONGRESS
JOURNAL**

PUBLISHED EACH MONTH BY
THE AMERICAN MINING CONGRESS,
Munsey Building, Washington, D. C.

OFFICERS:

Walter Douglas, President.
Harry L. Day, First Vice-President.
M. S. Kemmerer, Second Vice-President.
George H. Crosby, Third Vice-President.
J. F. Callbreath, Secretary.
William M. Conrad, Assistant Secretary.
John T. Burns, Western Secretary, Denver, Colo.

DIRECTORS:

M. S. Kemmerer, New York.
Irving T. Snyder, Denver, Colo.
W. J. Richards, Pottsville, Pa.
James E. Talmage, Salt Lake City, Utah.
Charles M. Moderwell, Chicago, Ill.
George H. Crosby, Duluth, Minn.
Samuel A. Taylor, Pittsburgh, Pa.
L. A. Friedman, Lovelock, Nev.
Carl Scholz, Chicago, Ill.
Harry L. Day, Wallace, Idaho.
Charles S. Keith, Kansas City, Mo.
Walter Douglas, New York.
John Barneson, San Francisco, Cal.

Paul Wooton, News Editor.

Subscription Rate, per year.....	\$2.00
Single Copies.....	.20

Entered as Second Class Matter January 30, 1915,
at the Postoffice at Washington, D. C.

FEBRUARY, 1918

**STORROW GIVEN WIDE POWERS
TO DEAL WITH COAL MATTERS
IN NEW ENGLAND STATES**

J. J. Storror, of Boston, the New England Fuel Administrator, has been authorized to arrange for a supply of coal, at the President's prices, in less than car-load lots for cases of immediate and pressing exigency, under arrangements by which the Fuel Administration subsequently will return to the parties from whom the coal is supplied the like amount and at the same prices.

To insure the uninterrupted operation of public utilities and important industrial plants, Mr. Storror is authorized to permit sales of coal on storage in New England at wholesale upon the same basis of prices as that prescribed for sales by retailers in the order of the Fuel Administration dated October 1, 1917. In both these classes of cases, the New England Fuel Administrator is authorized to act

without previous consultation with the Fuel Administration in Washington.

Provision is also made in the order for approval of Mr. Storror, after communication with Washington, of sales in certain cases of coal owned by jobbers in order to meet cases of real necessity. The prices of coal in these cases must be approved by the New England Fuel Administrator, and must not exceed cost plus the jobbers' margin prescribed in the President's order relative thereto.

It is believed that there is in New England, in the hands of certain dealers and consumers, surplus coal from which the owners would be glad to supply the needs of less well-stocked users if they could do so without loss to themselves. This order clothes Mr. Storror, as New England Fuel Administrator, with power to authorize such sales, and to relieve many, if not all, cases of shortage in the important industrial plants, public utilities, and domestic requirements.

**ROCKY RIDGE WAGE DISPUTE
IS ADJUSTED SATISFACTORILY**

Operators and miners of the Rocky Ridge district comprising what is known as the Broad Top field in Pennsylvania reached an agreement in their wage controversy whereby the matter was satisfactorily adjusted.

The agreement signed provides that the day wage rate of the men shall remain the same as other Central Pennsylvania fields—\$5 a day for inside labor and the general scale for outside day labor. The mining rate will be ten cents above that of other Central Pennsylvania fields or \$1.11 $\frac{1}{2}$ per ton. The latter rate is to be effective until April 1 when it is to be withdrawn, making a new wage rate on the basis of the balance of Central Pennsylvania territory. On April 1 the rate will be \$1.01. This agreement affects 2,300 miners in Bedford and Huntingdon counties.

Working on Fuel Conservation

The Conservation Division of the United States Fuel Administration is devoting much time to analyzing all the suggestions for the conservation of fuel which are coming from all parts of the country. The analysis is aimed to discover not only the largest wastage of fuel, but those large consumptions of coal for nonessential purposes in which limitation is most available and will produce the quickest results.

Many activities which involve large consumptions of fuel and many methods of using this fuel which are perfectly legitimate in times of peace, will be found susceptible of changes which involve very slight sacrifice of material interests, but offer opportunity for considerable savings of fuel.

Campaigns for the saving of coal in domestic heating, lighting, and cooking, as well as in the largest industrial establishments, are well under way.

WYOMING OIL MEN HAVE ROUSING BANQUET

Enthusiasm Over State Chapter Shown at Gathering of Prominent Men at Casper.

EDITOR'S NOTE.—*The following report from John T. Burns, the western secretary of the American Mining Congress, was not submitted for publication, but it tells so concisely just what happened that we are printing it as received.*

By JOHN T. BURNS

I take pleasure in submitting herewith report of the organization work in connection with the Wyoming Chapter. Together with Mr. Arthur Ponsford, and oil attorney of this city, whose calm and well-balanced statement regarding the Walsh-Pittman Bill had much to do with controlling the local situation, I arrived in Casper a week ago Sunday to attend what was originally planned as an organization meeting to settle the details relative to a state conference of oil men the following Thursday. By telegraph and long distance phone I had organized a working committee, which committee had called together a few local oil men to meet me in the lobby of the Midwest Hotel. By the assembly hour, 10 o'clock, we had too many for a convenient session in the lobby, and retired to the nearby offices of an oil well supply company. Before we could call to order, the place was jammed and oil men still coming. We hurriedly arranged for a meeting in the Circuit Court Room at the Court House, and retired to that building. About seventy-five were present, and instead of talking over organization, we had a nice talk from Mr. Ponsford, and from some of the local oil men relative to the Walsh-Pittman Bill. At 12.30 we adjourned to 2.30, having appointed a Resolutions Committee. After re-convening we were in session constantly until 5.30, so that you can see there was great interest. The Organization Committee then authorized me to call the convention, and gave me a list of committee men desired in each of the thirty-five towns in the State where oil, coal, and iron interests are represented. I protested that such procedure would be rather expensive, but was promptly told that that was Casper's way of doing things, and what they wanted was a state convention. From Sunday, at dinner time, until Monday night, after dinner, I remained in my room practically all the time, calling and answering long distance communications. Tuesday and Wednesday were spent helping with the local plans, then working out a program. We had a bear of a convention on Thursday, filling the Circuit Court Room all day, beginning at 10 o'clock. At 5 o'clock we adjourned to the grill room of the Henning Hotel, and one hundred and forty Hale and Hearty men, representing twenty-one towns and cities of Wyoming, ate and drank \$750 worth of eats and drinks, and listened to some of the best

speeches that I have ever heard at a dinner. Senator Kendrick talked for just one hour of his experiences on the battle line in France. His talk changed the spirit of the gathering from levity to seriousness, and I guess that was one reason there was some Burgundy left in the glasses. We remained at the dinner from 5 o'clock until 9.20, when it was announced that the Burlington train for Denver (which had been disabled by official order two or three days previously) had made all repairs and would pull out in ten minutes. Everybody was jerked to the train in automobiles, waved farewell by the local boosters, and there closed one of the best small conventions I have ever had anything to do with. We closed the chapter with 105 recorded members (and three signed up in Denver this week), and they have set the limit (as Frank Curtis told me yesterday) at 500, and intend to have a State Chamber of Commerce which will put Wyoming on the map for keeps.

California Minerals Maintain High Levels

The statistical division of the California State Mining Bureau, under the direction of Fletcher Hamilton, State Mineralogist, has made a careful estimate, from information now available, of the mineral production of the State for the year 1917. This estimate is in advance of the actual figures which will be available later. The indications are that the total for all products, metallic and non-metallic, will reach a figure approximating \$142,000,000, as against a total of \$127,901,610 in 1916, when for the first time in the history of the State it exceeded one hundred millions in value.

The major portion of the increase is due to petroleum, the output of which increased about 7,000,000 barrels in quantity, and at least 25 per cent in price per barrel. Gold fell off slightly on account of the labor scarcity and the higher cost of supplies. Of the other important metals, tungsten and zinc apparently decreased about one-half in value; silver a slight decrease in amount but an increase in value because of higher prices; copper increased to about 57,000,000 pounds and \$15,000,000; lead more than doubled in value; quicksilver increased to at least 23,000 flasks and \$2,200,000. The price of this last-named metal closed the year on a firm market at \$115 per flask. As to chromite, magnesite, and manganese, it is too early yet to obtain definite data as to the amounts, but all three will show material increases, and it seems likely that their total value will reach at least \$3,800,000, an increase of over \$1,000,000.

Cut Down Passenger Service

The Fuel Administration has had brought to its attention the possibility of saving a considerable quantity of coal in the larger cities by cutting down the suburban steam railroad passenger service during the non-rush hours.

IRON ORE PRODUCTION HOLDS OWN IN 1917

Average Value of Ore Increases to \$3.12 Per Ton During Year Recently Closed

The iron ore mined in the United States in 1917 amounted to about 75,324,000 gross tons, compared with 75,167,672 tons in 1916, an increase of 0.2 per cent. The figures for the two years are so nearly the same, however, that when the final returns are received from all the producers the actual quantity mined in 1917 may prove to have been less than that mined in 1916. The shipments from the mines in 1917 are estimated at 75,649,000 gross tons, valued at \$236,178,000, compared with 77,870,553 tons, valued at \$181,902,277 in 1916, a decrease in quantity of 2.9 per cent, but an increase in value of 29.8 per cent. The general average value of the ore per ton at the mines for the whole United States was, therefore, \$3.12 in 1917, as compared with \$2.34 in 1916. The stocks of iron ore at the mines apparently decreased from 10,876,332 gross tons in 1916 to 10,560,000 tons in 1917, or 2.9 per cent.

To obtain these statistics preliminary figures received from producers of nearly 95 per cent of the normal output of iron ore were compiled under the direction of Ernest F. Burchard, of the United States Geological Survey, Department of the Interior, and were supplemented by estimates covering the remainder of the output.

About 85 per cent of the ore mined in 1917 came, as usual, from the Lake Superior district, mined about 63,964,000 gross tons and shipped 64,275,000 tons, these quantities representing a very slight increase and a decrease of 3.2 per cent, respectively, compared with 1916. The shipments of iron ore by water from the Lake Superior district, according to figures compiled by the Lake Superior Iron Ore Association, amounted in 1917 to 62,498,901 gross tons. It thus appears that the iron-mining industry in the Lake Superior district has been able to bear the strain of the war demand, but not to duplicate the great record of ore shipments made by Lake Superior in 1916, which amounted to 64,734,198 gross tons. The slight falling off, it is understood, was due to less favorable weather for shipping early and late in the season of 1917, rather than to inability of the Lake fleet to handle the ore mined.

The South mined and shipped more than 8,100,000 tons of iron ore, the bulk of which was produced in the Birmingham district, Alabama, but the iron mines of Georgia, Tennessee, North Carolina, and Virginia contributed about 1,400,000 tons to the total.

The Northeastern States—New Jersey, New York, and Pennsylvania—increased their production slightly as compared with 1916, and shipped to blast furnaces approximately 2,

446,000 tons of ore. This quantity, however, represented a decrease of 4.1 per cent as compared with the shipments in 1916.

Colorado, New Mexico, and Wyoming, the principal iron ore producing States in the West, are estimated to have mined and shipped approximately 666,000 tons of iron ore, compared with 717,600 tons in 1916, a decrease of 7.2 per cent.

Other States, such as California, Connecticut, Iowa, Maryland, Massachusetts, Missouri, Nevada, Ohio, Utah, and West Virginia, in which there are small iron-mining operations, are estimated to have shipped about 144,000 tons of ore, compared with 134,002 tons in 1916, an increase of 7.5 per cent.

The imports of iron ore for the eleven months ending November 30, 1917, according to the Bureau of Foreign and Domestic Commerce, Department of Commerce, amounted to 913,500 gross tons, so that probably the imports for the whole year reached 985,500 tons, compared with 1,325,736 tons in 1916.

GOVERNMENT SPECIALISTS WELL KNOWN TO MINING MEN

R. R. Hornor, one of the Bureau of Mines' mining engineers, was born at Clarksburg, W. Va. His early education was obtained in the public schools at that place. Later he attended Wesleyan College, at Buckhannon, W. Va. He then spent two years in the Lehigh Preparatory School, after which he took the metallurgical course at Lehigh University. He was graduated from the latter institution in 1899 with a B. S. degree in metallurgy. He then took a post-graduate course at the Columbian University from that institution.

Following the completion of his schooling, Mr. Hornor went to Mexico, where he was connected with the Mexican Copper Company, at Ramos, in the state of San Luis Potosi. After two years with this company, he went with the Cia. Minera de Peñoles, at Mapami, Durango, where he was assistant superintendent of the large smelting plant operated by that company. After a year at Mapami, Mr. Hornor went to South Africa as a member of the staff of the South Africa Consolidated Goldfields, Limited, as underground manager. He directed the development of deep levels in these mines for five years. He then severed his connection with this company to do consulting work for Andrew Robertson, who at that time owned the Latouche mines, in Alaska. Mr. Hornor made extended examinations of properties in Alaska, the Northwest, and in Mexico for Mr. Robertson. A year ago he joined the staff of the Bureau of Mines, and has been engaged since that time in making examinations of low-grade properties in Utah, has examined the black sands of the Northwest, and has just completed an examination of the tin deposits in the Black Hills.

NOTED MINING ENGINEER MADE OIL ADMINISTRATOR

M. L. Requa Chosen to Handle Petroleum Matters—Was Consulting Engineer for Bu- reau of Mines.

United States Fuel Administrator Harry A. Garfield has announced the appointment of M. L. Requa, of California, to handle oil matters for the United States Fuel Administration. Mr. Requa has full charge of the activities of the Fuel Administration in connection with oil, under the direction of Fuel Administrator Garfield.

Since the organization of the United States Food Administration, Mr. Requa has been an assistant to Food Administrator Herbert Hoover. His transfer was arranged with Mr. Hoover, who consented to the change because of Mr. Requa's qualifications for his new position. Mr. Requa leaves the food Administration only because it is believed his services are of more value to the Government in connection with oil.

Mr. Requa is a consulting engineer to the Bureau of Mines on petroleum, is vice-president of the American Institute of Mining Engineers, and is a member of the council of the Mining and Metallurgical Society of America. He has been connected at various times with the oil industry in California.

The first activity of the new oil division of the Fuel Administration will be to undertake an investigation of the entire petroleum situation and to recommend to Dr. Garfield such action as may be necessary to handle petroleum matters.

A meeting was held early in January at the office of the United States Fuel Administrator, at which the Petroleum War Service Committee met in conference with Dr. Garfield and M. L. Requa, the recently appointed head of the oil division of the Fuel Administration.

Both Dr. Garfield and Mr. Requa stated it was the desire of the Fuel Administration that the men representing the petroleum industry should cooperate fully with and give to the Fuel Administration the benefit of their knowledge, to the end that whatever control is to be exercised shall be only after full knowledge of all phases of the problem and of an intelligent and constructive character.

It was further stated that the appointment of Mr. Requa at this time was not because of any new conditions, but that fuel oil, having been included among the duties assigned to Dr. Garfield by the President, the subject had been reached in the natural course of events, and that a departmental head in the person of Mr. Requa had been appointed.

It was indicated that it was not the intention of the Fuel Administration to take up at present the question of price-fixing, but that a general survey of the whole industry would

be made in cooperation with the various branches thereof, with a view to determining what action the Government might take to assist in supplying more effectively the necessary fuel for war purposes and to provide and arrange for the supplies of fuel oil necessary to the various industries at home.

It is also the intention of the Administration to study the situation, with a view to co-ordinating by voluntary agreement the manufacture and distribution of petroleum products and to stimulate the production of crude oil, so that all needs shall be fully met at fair and just prices.

Mr. Requa stated that it was his desire that the Petroleum War Service Committee should for the present continue its activities without change, to the end that there should not be any interruption in the continuous flow of petroleum products to the Allies or for our domestic uses.

A few days following the appointment of Mr. Requa, rumors which were in circulation resulted in the issuance of the following statement from the Fuel Administration:

"The hysterical outcry that has been raised from various sources since the announcement by the Fuel Administrator of the appointment of M. L. Requa as head of the newly created oil division of the Fuel Administration is without reason or is deliberate propaganda for the purpose of creating unrest. If the latter, it may be classed with similar rumors of obviously pro-German origin which have been circulated from time to time regarding the activities of the Food Administration, concerning which the most absurd rumors have been set afloat without any foundation in fact.

"If it is due to any hysterical fear on the part of the petroleum industry or any of its representatives that ill-conceived plans will be promulgated, a careful reading of the statement put out Saturday afternoon, following a conference with the Petroleum War Service Committee, would be instructive and illuminating. The members of the committee might be interviewed to advantage by any timid individual expecting the overnight destruction of the industry. Vicious propagandists, of course, cannot be reassured in this way, as their motive is of entirely different character.

"The fact that a director of the oil department of the United States Fuel Administration has been appointed should be taken as a matter of course, as the supervision of fuel oil is part of the duties assigned to Dr. Garfield, the Fuel Administrator.

"The conflict of views is amusing, inasmuch as prophecies have been made on the one hand that gasoline would sell at 10 cents a gallon, and on the other hand that it would sell at 50 cents. The conservative citizen might strike the happy medium and optimistically conclude that governmental control does not necessarily mean disaster."

COALLESS DAYS NECESSARY, SAYS GARFIELD STATEMENT

Fuel Administrator Defends His Drastic Order and Reveals Some Things as to Industrial Conditions

In an attempt to justify his order providing for coalless days, Fuel Administrator Garfield issued the following statement:

"The order suspending temporarily the operation of industrial plants in portions of the United States is drastic. Yes, war is drastic. This war is the most extensive and involves greater sacrifices than any war heretofore. The American people, led by the President, entered this war deliberately. They are staking everything for the realization of a great ideal, and the ideal is practical. We know that democracy must be made a reality at home as well as abroad; that its benefits must be shared by all and its sacrifices borne by no single class.

"Capital and labor are embarked in this war because all Americans are in it, and the American spirit cries out against the least suggestion that the burden be shifted to the backs of any one class, least of all of labor, for labor has less financial ability to meet the prolonged hardships of war than capital. We are realizing the truth now as never before that capital and labor are not two, but one. Their problems present merely two aspects of the same vital question. The unselfish and patriotic impulses and the calm look ahead will lead the country to approve of the order now in force.

"Industry is in an unbalanced condition. We lack many essentials—food, clothing, fuel. We have piled up enormous stores of things not essential to life but very essential to war. We have piled them so high on our docks and in our storehouses that the ships available cannot carry them away as fast as they pile up. For lack of bunker coal, held back by traffic congestion, the number of ships in our harbors increases menacingly.

"The food supply is threatened to an even greater degree than the fuel supply. This condition is in large part due to the congestion that at many points holds the loaded cars in its grip.

"To single out industries not engaged to some extent in war manufacture is to select industries which in the aggregate will bring relief only if suspended indefinitely. To require all industries except a comparatively small part to cease for a few days quickly accomplishes the desired result and permanently injures none. The order, as it stands, puts all industry on an equal footing, favoring none and avoiding unfair competition; but this reason alone is not sufficient. This reason, plus the fact that the order will put coal in the empty bins of the people, will save coal, will aid in breaking up congestion of

traffic, and in furnishing an adequate supply of coal to the people who need it and to the ships which cannot sail without it—these are sufficient reasons, and justify the order.

"Only those industries producing necessary war material that can be promptly delivered are permitted to operate during the suspension period. To permit industries with a coal supply on hand to operate would allow many of the least essential to continue while some of the most essential would be compelled to stop. Moreover, to allow those fortunate enough to possess a coal pile to continue would result in adding to the traffic congestion, and unless they also are suspended at a later period the needed saving in consumption of coal would not result. To have delayed the application of the order would only have added to the congestion. It is no condemnation of industry to say that each would have striven to the utmost to increase its supply of coal and other raw material during the days prior to the application of the order.

"The most urgent thing to be done is to send to the American forces abroad and to the Allies the food and war supplies which they vitally need. War munitions, food, manufactured articles of every description, lie at our Atlantic ports in tens of thousands of tons, while literally hundreds of ships, waiting, loaded with war goods for our men and the Allies, cannot take the seas because their bunkers are empty of coal. The coal to send them on their way is waiting behind the congested freight that has jammed all terminals.

"It is worse than useless to bend our energies to more manufacturing when what we have already manufactured lies at tidewater, congesting terminal facilities, jamming the railroad yards and sidetracks for long distances back into the country. No power on earth can move this freight into the war zone, where it is needed, until we supply the ships with fuel.

Once the docks are cleared of the valuable freight for which our men and associates in the war now wait in vain, then again our energies and power may be turned to manufacturing, more efficient than ever, so that a steady and uninterrupted stream of vital supplies may be this nation's answer to the Allies cry for help.

"It has been excess of production in our war-time speeding up that has done so much to cause congestion on our railroads, that has filled the freight yards to overflowing, that has cluttered the docks of our Atlantic ports with goods waiting to go abroad. At tidewater the flood of freight has stopped. The ships were unable to complete the journey from our factories to the war depots behind the firing line.

"Added to this has been the difficulty of transporting coal for our own domestic needs. On top of these difficulties has come one of the most terribly severe winters we have known in years.

"The wheels were choked and stopped; zero weather and snow-bound trains; terminals

congested; harbors with shipping frozen in; rivers and canals impassable—it was useless to continue manufacture and pile confusion on top of confusion.

"A clear line from the manufacturing establishments to the seaboard and beyond—that was the imperative need. It was like soldiers marching to the front—the men in the foremost ranks must have room to move.

"More than a shock was needed to make a way through that congestion at the terminals and on the docks so that the aid so vitally needed by the Allies could get through.

"The incidental effect of this transportation situation on coal production has been disastrous. There is and always has been plenty of fuel, but it cannot be moved to those places where it is so badly needed while railroad lines and terminals are choked. Throughout the coal fields scores, even hundreds, of mines are lying idle because of railroad inability to supply the cars to carry away their product. Coal mines cannot operate without cars. Cars cannot be supplied while the railroads are crippled by the present freight congestion, which keeps idle cars lying useless in the freight yards.

"In the past week the production of coal has been disastrously reduced. Reports in some cases have shown 90 per cent of the mines in certain fields closed completely for lack of cars.

"This is war! Whatever the cost, we must pay it so that in the face of the enemy there can never be the reproach that we held back from doing our full share. Those ships laden with our supplies of food for men and food for guns must have coal and put to sea."

DOMESTIC USERS OF GAS MUST BE SUPPLIED FIRST

Natural gas must be supplied first for domestic purposes. This was the substance of instructions issued by the Fuel Administration to the United Fuel Gas Company, which operates in the West Virginia Gas Fields and supplies natural gas to a large number of cities, including Louisville, Lexington and Frankfort, Kentucky. Reports from the latter cities to the Fuel Administration indicated that the gas supply in the three Kentucky cities had been practically shut off through diversion to Portsmouth, Ohio, to supply steel plants working on Government contracts.

When the matter was called to the attention of the Fuel Administration, instructions were sent to the gas company to the effect that gas for domestic purposes takes precedence over that for manufacturing and other purposes.

To Operate on Coal Saving

A nation-wide campaign for economy in the use of coal among steam plants will be undertaken by the United States Fuel Administration. The campaign was determined upon the following a conference of representatives of the Fuel Administration, the Bureau of Mines and the American Society of Mechanical Engineers held in New York.

Organized Wood Fuel Companies

In the task of conserving coal by substituting the burning of wood for fuel, wherever practicable, the County Fuel Administrators of Tennessee have set an example in practical efficiency that is certain to stimulate the Fuel Administrators of other States.

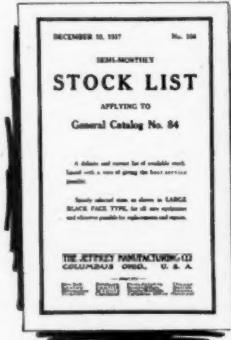
In practically every county of Tennessee, War Fuel Companies have been organized. In some counties there are two companies. These are organized by patriotic local citizens, the capitalization of each company varying with the situation; the average capitalization being \$1,500. Each local company has a manager who superintends the cutting and the selling of wood.

Jeffrey Stock List

The Jeffrey Manufacturing Co., which handles coal mining machinery, electric locomotives, elevating, conveying and crushing machinery, writes THE MINING JOURNAL as follows:

"In order to give our customers the best possible service, especially during such times as these, we have prepared a stock list showing material actually on hand. This is something of an innovation in so far as it applies to manufacturers of elevating, conveying and power transmission machinery.

"The stock list is issued semi-monthly, and



contains a complete list of all available stock covering chains and attachments for elevators and conveyors, malleable iron and steel elevator buckets, belt conveyors, spiral conveyors and fittings, take-ups, bearings, hangers, pulleys, etc., together with approximate shipping dates for various materials.

"The advantage to the customer is readily appreciated as it enables the trade to order materials which are in stock, thereby getting prompt shipment, and the further advantage of eliminating extra cost which is necessary when special equipment is produced.

"The stock list will be sent regularly to all who desire it upon request to any of our branch offices, or to the home office at Columbus, Ohio, 958 North Fourth Street."

**TO USE WATERWAYS MORE
IN DISTRIBUTION OF COAL**

Plans for diverting a part of the tremendous coal traffic from the overworked railroad system of the country to inland and coastwise waterways are under consideration by the United States Fuel Administration. It is expected that a material saving in cars and motive power can be affected by utilizing water transportation for coal supplies whenever possible.

Maj. Gen. William S. Black, Chief of Engineers of the Army, in charge of river and harbor improvement work, is cooperating with the Fuel Administration in the water transportation plans. General Black has submitted to L. A. Snead, in charge of fuel supplies and distribution for the Fuel Administration, the results of an investigation into the terminal facilities and equipment available for the transportation of coal by water. The investigation showed clearly that a large saving in railroad transportation can be effected by utilizing all of the water transportation facilities.

The shipment of coal from eastern fields to New England is one of the most striking instances of the opportunity for saving. At present large quantities of coal are shipped from Pennsylvania and West Virginia fields direct to New England points by rail. Facilities are available whereby practically all of this coal could be sent by a much shorter rail haul to tidewater at Baltimore, Philadelphia and New York and thence by barge to New England ports. The longer rail haul keeps the coal in a much-needed car for a week or more, while the shorter haul could be made in about one-half of that time.

A detailed report is in the course of preparation on all cases where long rail routes are being used in preference to available water routes, and the Fuel Administration will undertake to see that shippers take full advantage of water transportation wherever possible.

No Independent Action

H. A. Garfield, the United States Fuel Administrator, has issued the following statement:

"To further assure continuous and increased production of coal during the period of the war, the United States Fuel Administrator directs that no independent action be taken by either the operators or mine workers to force any settlement in dispute without submitting the matter in controversy to the United States Fuel Administrator. This applies to all districts, whether joint relations have been established or not. Where joint relations have been established, the regular machinery prescribed in the contract for adjustment of disputes shall first be used and remedies exhausted. Work at the mines shall continue without interruption pending the final settlement of the question in the manner indicated."



Harris & Ewing

CHARLES B. HENDERSON
The New Senator from Nevada

Chicago Gets More Smokeless Coal

Shipments of coal into Chicago have been increased as a result of an order issued by the United States Fuel Administration to operators in the Pocahontas field in West Virginia calling for supplies of low volatile coal used in large quantities in that city. The orders to operators called for shipments of 50 per cent of the contracts which they had for supplying that city. This action was taken following the recent visit to Washington of Federal Fuel Administrator Raymond Durham, of Chicago, and the showing made by him that further curtailment of shipments of this grade of coal would result in serious impairment of activities among a number of industries.

New Prices for Tennessee Coal

An increase of 10 cents per ton in mine prices for coal produced in middle Tennessee has been ordered. The order puts the middle Tennessee coal operators on the same price basis as the coal operators of eastern Tennessee. The middle Tennessee operators have for some time been seeking the price increase. The new prices, which affect the counties of Bledsoe, Grundy and White, are as follows: Run of mine, 2.40; prepared sizes, 2.65; slack, 2.15. The old prices were: Run of mine, 2.30; prepared sizes, 2.55; slack, 2.05.

ASKS CONGRESS FOR A DIRECTOR OF MINERALS

War Minerals Committee Submits Draft of Bill, Which Is Being Held Up to Hear from the Mining Industry.

A bill providing for a director of minerals is before the House Committee on Mines and Mining. The bill has been considered by the committee, and a number of amendments have been made. During the consideration of the bill, however, protests began to come in from the mining sections, and Representative Foster, the chairman of the committee, decided not to introduce the bill until time will have been given to analyze the merit of the objections which have been raised. The bill, as submitted to the committee, was formulated by the War Minerals Committee. That committee has issued an extended statement, giving its reasons for believing that such a measure is necessary. The statement from the War Minerals Committee is as follows:

"Successful prosecution of the war demands that prompt measures be taken to stimulate and direct the mining industry. Adequate supplies of ores and their products can be assured for a period of several years only by a constructive program, which must be formulated at once. At present we rely chiefly upon foreign sources for many essential minerals, although in marked instances we have undeveloped resources ample to meet any contingency. Such dependence will lead to shortages, which retard military preparations and inevitably demand costly diplomatic and trade concessions. Further, a burden is imposed upon our shipping, which is now in urgent need of relief. Of other minerals we must supply our own growing needs and a large part of those of our allies. In the face of increasing requirements, we meet higher costs, unstable prices, transportation congestion, labor problems, new taxes, and other conditions which discourage individual enterprise and reduce output.

"The abnormal conditions in domestic industries, together with uncertain foreign sources of supply and diminishing ocean tonnage, even now cause scarcity of war materials, which will prolong the war. No governmental body now has the authority which must be exercised to stimulate domestic production and to control effective distribution and use of mineral supplies. This bill has been framed to give the necessary authority to the President. The magnitude of the mineral industry, the vast interests founded on it, and the gravity of the situation demand that the President be given wide powers.

"The bill has been modeled after the Lever bill (Public, No. 41, Sixty-fifth Congress), under which the President formed the Food and Fuel administrations. The circumstances which justified the passage of that act are almost identical with those that now threaten to

reduce the supply of ores and minerals which are needed in the conduct of the war. Although applying to different commodities, the objects are the same, and they can only be secured by granting similar broad powers to the President. The bill provides authority to encourage the production of ores and minerals and conserve their supply, to assure equitable distribution, to improve and direct utilization, to prevent manipulation, speculation, unfair practices and unequal division of profits, to lessen our dependence upon imported materials, and to control prices.

"The most far-reaching provision of the bill is incorporated in Section 14, which grants power to fix prices and make guarantees to stimulate the production of ores and minerals. The effect of minimum prices as contracted with maximum prices is to encourage output. The authority to determine and fix minimum prices, therefore, becomes the most important instrument in the bill, which would fail to accomplish its purpose unless such authority is included. To strengthen the Government's purchasing power and prevent speculation and overproduction, authority is given the President to proclaim maximum prices.

"The purchasing power of the Government is today so great that it has been indirectly able to compel producers of many commodities to accept maximum price regulation. The agreements have not been confined to Government purchases, but in some instances have been extended to include private transactions. It is acknowledged that such agreements are not supported by law and could not be enforced without the full cooperation of producing mines, smelters and selling agencies. In the future maximum price regulation may become imperative, and the authority to make such regulations should be provided by law rather than to place reliance upon producers or on the influence of Government officials and public opinion. The bill (Section 14) confers such authority upon the President. Such action, however, cannot be wisely taken except through a body which is able to determine what the effects will be upon production. Price regulation is dangerously shortsighted unless designed to equalize supply and demand and to operate over definite periods. Prices must be so determined that adequate production will be assured during the war. Mining responds slowly to increased and urgent demand, and there is danger that unrestricted competition operating under a low maximum price may force the abandonment of mines whose output may be required at a later time.

"Nearly every Government board or department has been concerned with some phase of the import problem as related to different minerals, and their efforts have been almost exclusively directed to maintaining imports on the past scale. Importing firms and consumers have not recognized that there are deposits of many of the minerals in our own country which can supply part or all of our requirements. At the outset, such assistance was justified, even though development of domestic

deposits was thereby discouraged or delayed. Our position will be strengthened to the extent that we become self-sustaining, and imports must be restricted to those materials and in quantities which cannot be supplied under any circumstances by our own mines. The time has come to give Government encouragement to every new enterprise which helps to reduce our imports.

Under existing internal conditions, new mines cannot be rapidly opened and equipped or operating properties enlarged without assistance in some form. Private initiative cannot make headway against the obstacles which must be removed, and before well-directed efforts will be made on the part of producers the Government must state its requirements, announce that imports will be curtailed and guarantee producers that fair prices will prevail over definite periods. Such a program can only be formulated and executed by an agency in which the entire control of the mineral industry is centered.

"Plans to open new mines and increase the output of producing mines will be abandoned or postponed unless the Government is prepared to say that reasonable fixed or minimum prices will be maintained. The inability of producers to execute long-time contracts has contributed more than any other single factor to hinder development. Uncertainty regarding the duration of the war and the trend of prices thereafter discourage investment in any enterprise which is primarily based on unusual war demands. Capital cannot be induced to seek such investments unless the Government removes the uncertainties which confront those interested in mining. Unless the fact is recognized that mining introduces an added element of risk and that Government encouragement is required, we cannot expect to materially reduce our imports and expand our production in the same proportion that requirements may increase.

"Measures must be taken to provide supplies beyond our immediate needs, in anticipation of a long war. It is imperative that some official body proceed to collect and make known the combined estimates of each branch of our military establishment and domestic requirements.

"It is obvious that there is no logical separation possible between the control of the mineral industry and the control of the industries to which its products are essential materials, and effective regulation of one necessitates the regulation of the other. In preparing this statement the War Minerals Committee has selected the following illustrations from the needs of the mineral industry with which it is familiar. The authoritative facts relating to the industry have been taken from records of the Geological Survey and the Bureau of Mines:

"The extent to which we must continue to rely upon foreign sources for supplies of certain minerals requires that investigations should be undertaken to devise substitutes for

those materials and to improve the manufacturing methods so that smaller amounts will be used. Among the metals for which substitutes should be actively sought are tin, manganese and chrome. Certain uses of tin are not essential in war time, and satisfactory substitutes have been devised and used to a limited extent. Indirectly the Government can now control the distribution and use of tin, but it should conduct a campaign of conservation among consumers whose supplies should be curtailed.

"To secure enough sulphuric acid, it will be necessary to use foreign and domestic raw materials to the best advantage. This will require the use of different materials by certain plants, and must be accompanied by the authority to compel such changes in practice. A close survey of the uses of sulphur will undoubtedly show means by which new economies may be introduced. In this connection there may be an opportunity to save thousands of tons of pyrites and sulphur by better handling of burners at acid works and sulphite wood pulp mills. There is an opportunity to render technical assistance to improve the concentration of pyrite and manganese ores. Production of both minerals in this country may be increased with existing equipment by improved milling methods.

"Priority certificates and transportation orders must be granted to new pyrite, manganese, chromite and graphite producers if any attempt is to be made to replace our imports from domestic sources. Every mining company now finds it extremely difficult to move their ores and obtain equipment, supplies and fuel. Some companies have recently shut down because they have not been able to obtain fuel or transport their product. Others are suffering because they cannot obtain deliveries of new machinery. Unless prompt relief is given, nearly every mine in the country will be handicapped and forced to reduce its output. This critical condition cannot be overemphasized. Judgment based on close association and knowledge of the industry must be exercised, and the assistance which could be rendered to both the Priority Board and producers would relieve congestion in shops and greatly aid those who need equipment and supplies. Opportunities to adjust material and ore movements will present themselves, and saving of cars and length of hauls could be effected.

New production of such metals as manganese and chrome may be expected to come in a large measure from many small operators. Frequently they do not know to whom to offer their product, and are not familiar with the trade specifications and grades of the material which they mine. Such conditions have resulted in many unsatisfactory transactions which have discouraged the producer and prejudiced the buyer. Production from such sources can be greatly stimulated under Section 11 of the bill."

**DECEMBER COAL PRODUCTION
FALLS OFF 5,000,000 TONS**

Severe cold and snow, impeding traffic on a railway system already congested with an unprecedented burden of freight, and even retarding surface operations at the mines, caused the December production to drop more than five million tons from that of November, says a Geological Survey report. A preliminary estimate places the bituminous output (including lignite and coal made into coke) at 42,143,000 net tons. This was the lowest recorded since April, 1917, when a production of 41,813,000 tons was reported.

The average production per working day during December was 1,685,702 tons, a decrease of 10 per cent when compared with November, 1917, and of 4.4 per cent when compared with December of the preceding year.

The year's production amounted to 544,260,000 net tons. This was an increase over the production during 1916 of 41,743,000 tons, or only 8.3 per cent. The expected increase of 10 per cent forecasted in the bulletin of October 11 might have been attained had it not been for the storms of mid-December.

The increase of the 1917 output over that of 1915 was larger, amounting to 101,637,000 tons, or 23 per cent.

Production during the first fortnight of 1918 has been at the rate of 1,799,000 tons per working day. The average for the year 1917 was 1,777,000 tons.

The month's production of beehive coke is estimated at 2,420,143 tons an average per working day of 96,806 tons. The lowest daily average recorded before in any month during the last two years was 103,268 tons in February, 1917.

The total beehive output for the year was 33,994,833 net tons, or 1,470,000 tons less than for 1916. The decrease, amounting to 4.3 per cent, occurred simultaneously with an increase in the demand for coke, and is to be accounted for, in part, by the effect of car and labor shortage in limiting output, but chiefly by the successful competition of by-product coke. Preliminary estimates place the production of the latter at 22,600,000 tons, a gain of 3,531,000 tons over 1916, or 18.5 per cent. By-product ovens have thus not only supplied the additional consumption induced by the growth of industry, but have displaced nearly one and a half million tons formerly supplied by beehive ovens.

The total output of coke, including both beehive and by-product, is estimated as 56,600,000 net tons. Of this, beehive coke constituted 60 per cent and by-product 40 per cent.

The only regions to record an increase over November, 1917, and December, of the preceding year, were the South and the far West. The southwest held its own. Over the great producing areas of the North, from Illinois to Maryland, a severe depression was reported. Shipments in central Pennsylvania, Maryland, and the New River and Pocahontas fields of

West Virginia, fell off 20 per cent as compared with the preceding month. In the remainder of West Virginia and in eastern Kentucky they declined 13 per cent. In Illinois, Indiana and western Kentucky, and in western Pennsylvania, Ohio and Michigan, shipments, though as great as in November, were materially less than in December of the preceding year.

Zerbe Named District Representative

The United States Fuel Administration announced, January 28, the appointment of the seventh of its District Representatives, in the person of J. B. Zerbe, of Cleveland, Ohio. He will act as representative of the Fuel Administration in Belmont, Columbiana, Carroll, Coshocton, Guernsey, Harrison, Jefferson, Mahoning, Noble, Portage, Stark, Tuscarawas, and Wayne counties of Ohio, and Brooke, Hancock, Marshall, and Ohio counties in West Virginia.

All orders from the Fuel Administration for the shipment of coal from this district will hereafter be directed to District Representative Zerbe. He will allot these orders among the coal operators in his district, and will expedite the movement of coal from the mines in his jurisdiction.

**PREFERENTIAL ORDERS STOP
SMOKELESS SHIPMENTS WEST**

In response to telegrams from Chicago coal dealers making inquiry as to the Chicago supply of smokeless coal the Fuel Administration sent out the following:

"We have not issued orders discontinuing shipments of smokeless coal to Chicago. It has been necessary on account of the demand of the Government and New England requirements to request all operators in New River and Pocahontas fields to give preference in shipments to tidewater for those requirements. On account of the cross hauling involved it will be necessary to reduce shipments of this coal to western points including Chicago but this will be handled by substitution of other coal from fields involving shorter haul.

"This action is necessary in the present emergency in order to provide coal for government requirements and to assist the railroads in the matter of increasing their facilities by reducing cross hauls and long hauls as much as possible. Raymond Durham, Federal Fuel Administrator for Cook County, Ill., is in Washington and arrangements will be made to protect Chicago requirements as far as possible." The telegram went to the leading coal men and firms of Chicago.

WASTE IN BURNING COAL ENORMOUS, MANNING SHOWS

Fuel to the Value of \$250,000,000 Can Be Saved If Consumers Will Observe Simple Rules of Economy.

By VAN H. MANNING,

Director of United States Bureau of Mines

It has been generally known for some time that Americans are as wasteful of their coal as they are of all other resources. There is, perhaps, no other field of American endeavor in which the people can save as much money from actual waste as in the burning of coal. If the people can be aroused to an intelligent consideration of the burning of coal, they can save 10 per cent of the production. Last year that production was 600,000,000 tons. Ten per cent of this is 60,000,000 tons, and if you place an average value of \$4 a ton on this it represents a saving of nearly a quarter of a billion of dollars a year.

With a little more effort, through instruction, and a moderate remodeling of coal-burning equipment, which could all be accomplished during the war, another 10 per cent could be saved, which would bring the total saving up to nearly half a billion dollars a year.

Eliminating the fact that we are at war and considering the ultimate ideal in the burning of coal throughout the country, how much coal could be saved?

A census of this subject would be almost impossible. I can only give my opinion from what I know of the general situation. I will say that if we could equip the entire country with the best mechanical devices used in the burning of coal, and if we could make a skilled user out of the average user, we could get along with half as much coal as we are using. If we used 600,000,000 tons last year, I will venture the opinion that under ideal conditions we could have accomplished the same results with 300,000,000 tons. Such a result would solve our problem at once, would lower the price of coal, and would make it at once possible to send all the coal that may be needed by our allies.

All of this would depend upon the people taking the lessons in coal burning to heart, using the same care as they do in other things and stopping the spending of money on inefficient panaceas. I am told that thousands of dollars of the people's money goes into alleged coal powders that are supposed to save half your coal. There may be such a powder, but I have never seen it, and neither have any of the experts of the Bureau of Mines. On the other hand, at the earnest solicitation of well-meaning citizens, the bureau has tested a number of these powders, and has yet to find any efficiency in any of them. I have been forced to the conclusion

that the man who buys these alleged coal-saving powders is buying chemicals at chemical prices, and it is much cheaper to burn coal than chemicals.

A serious mistake the average manufacturer has been making is his refusal to consider his fireman as a skilled worker. Too often he is treated as a roustabout. He is generally put down in the room that is left. He is the last man to get your sympathy or good working conditions. Labor-saving devices are not given to him many times, and he is made to feel that he is a common laborer. In fact, a really good fireman is a skilled man, and should be so treated.

The ordinary fireman handles from 3 to 10 tons of coal a day. When coal costs the manufacturer from \$1 to \$2 a ton, as it did some time ago, you couldn't expect much from the fireman, but it is much different now. With coal now costing the manufacturer at least \$4 a ton, the fireman is now handling from \$12 to \$40 a day of the manufacturer's money, and the manufacturer is beginning to see how his money is being spent. This is an encouraging feature of the situation. It will mean a better recognition of the fireman, more efficient work, and a great saving in coal. In the near future I expect to witness a large saving of coal through the establishment in the great industrial centers of the immense central electric power stations. You may soon find the energy requirements of the country massed in the districts in which there is great density of manufacturing and great density of population. The possibility of saving coal through such plants is almost beyond calculation. Chicago, which is the best electrified city in the country, this power being as available in the metropolitan district as water is in most cities, has been studying the electrification of the railroads as a method of getting rid of the smoke nuisance. While no definite conclusion has been reached as yet, the question being one largely of finance, I have been informed that with the electrification of the railroads and the power for the entire Chicago area for all purposes massed in one place there can be a saving of 6,000,000 tons of coal a year in that one city.

In another community one company has the distribution of electric energy in the densely settled portion, while another company has the area outside of the municipal limits. Outside the maximum demand for energy comes in the morning; inside the city the demand for maximum energy comes in the afternoon. The institution that operates outside the city has idle plant during the hours of the day when the institution inside the city has its maximum demand. That duplication of investment and the excessive operating expenses is costing the people of that community \$6,000,000 more a year than is necessary, and, of course, using much more fuel than is necessary. If these conditions can be corrected in the great industrial centers of the country in the next few years, we

will be able to show a saving in coal consumed of more than 150,000,000 tons each year. In other words, under ideal operating conditions, the greatest saving to the country can come in the use of industrial coal.

Although we are a wasteful nation, we are very adaptable and quick to inaugurate reforms when they are once shown. I do not suppose that the country is aware generally of the quiet revolution that has been going on in the elimination of the beehive coke oven and the rapid growth of the by-products oven. In the latter oven the saving amounts to approximately 1,100 pounds of coal for each ton of by-product coke made. By January of next year, if present contracts are completed, we will have nearly 10,000 by-product coke ovens, with a coke production of more than 35,000,000 tons. The extent of the saving of the fuel resources of the country in this field alone will be appreciated when I tell you that the new ovens added since January, 1915, will save annually to the country 9,000,000 tons of high-grade coal. In the last three years the by-product coke production has practically doubled, and there has been as much gain in capacity as in the previous twenty years.

To the householder let me say that there are simple, practical rules to be followed with your furnace if one wishes to save coal and obtain the best results. These rules are embodied in a small pamphlet issued by the Bureau of Mines, and any citizen may have a copy without charge by writing to the bureau.

HIGHER PRICE FOR EXPORT AND BUNKER COAL IS ALLOWED

The Fuel Administration has fixed the price at which coal loaded here into the bunkers of ships and coal for export, except to Canada and Mexico, shall be sold. This somewhat difficult question has been dealt with, it is said, in a way designed to insure justice to producers here, to the United States Government and to foreign governments.

The order provides that coal for export or bunkering purposes may take a price of \$1.35 per ton higher than the domestic price. This leaves the average price at American ports still \$1.50 per ton lower than is charged for bunker coal at the leading English ports.

The Fuel Administration found that selling coal to foreign ships and for export cargoes at the same price fixed by the President's Proclamation for home consumption resulted only in putting a large gratuitous profit into the hands of foreign vessel owners and coal dealers—a profit subject to taxation of foreign governments in some cases at the rate of 80 per cent.

Coal for ship bunkers or cargoes sold to foreign buyers at our domestic price saves the foreign buyers at least \$3.00 per ton as compared with English coal bought at Cardiff or Newcastle. This \$3.00 saving has no effect in lowering the

shipping rate which is based on the cost of English coal.

This difference between the price a foreign buyer must pay for coal at European ports and the low price at Hampton Roads goes into his pocket as a gift from the United States. Similarly consumers of coal in South America and other countries must pay a price established by English competition and the difference between this price and the price established for the domestic buyers of the United States becomes additional profit for the importer in Argentine, for instance.

It thus became a serious question whether this profit should not be kept at home.

On the other side was the possibility of unduly increasing the proportion of our whole production going into foreign channels. This danger will be overcome through the licensing system of the War Trade Board by which a more rigid limitation of export coal will be made than ever before. The Fuel Administration will control every pound of coal which leaves the United States during 1918.

Attention is particularly called to the fact that it is an injustice to compel American producers to sell coal to foreign buyers at the same low price fixed by Presidential Proclamation for domestic consumers while other nations not only permit much higher prices for export but actually prescribe minimum prices so that competition shall not force cheap coal for export at the expense of home producers. We must, like other countries, consider the ultimate effect on the financial strength of the nation.

The decision reached and promulgated, while somewhat in the nature of a compromise, is believed fair to all concerned and fully protective of the interests of this Government.

The order of the United States Fuel Administration follows:

"The United States Fuel Administrator, acting under authority of an Executive Order of the President of the United States dated 23 August, 1917, appointing said Administrator, and in furtherance of the purpose of said order and of the Act of Congress therein referred to and approved August 10, 1917,

"Hereby orders and directs that, until further or other order of the United States Fuel Administrator, the maximum price of coal sold and delivered to vessels for foreign bunkering purposes or for export to foreign countries, except to Canada and Mexico, shall be the price prescribed for such coal at the mine at the time such coal left the mine, plus transportation charges from the mine to port of loading, plus \$1.35 per ton of 2,000 pounds. To this price, computed as above, the seller of the coal, or such other agency as performs the actual work of bunkering or loading the vessel, may add the customary and proper charges, if any, for storage, towing, elevation, trimming, special unloading, and other port charges, and is subject to all present and future regulations of the United States Government.

"Nothing in this order shall be construed to affect or modify any of the regulations of the War Trade Board regarding coal for export or bunkering."

GOODRICH

LEADERS for MINING

“LONGLIFE” Conveyor Belt
“GOODRICH” Elevator Belt
“COMMANDER” Transmission Belt
“COMMANDER” Air Drill Hose
“SUPERHEAT” Steam Hose
“COMMANDER” Water Hose
“HI-PRESS” Rubber Boots and Shoes
“DE LUXE” Truck Tires

Vanner Belts
Fire Protection Hose
Sheet Packing
Boiler Washout Hose
Suction Hose
Dredging Sleeves
Wires and Cables

Ins. N. E. C. and Mining
Valves, Valve Balls and
Discs
Pump Diaphragms
Respirators
Matting
Rubber Surface Clothing
Rubber Gloves

Every one is a Leader in its Field because Made by
GOODRICH—Maker of Everything that's Best and
Most Worth While in Rubber. Insist on **GOODRICH**

THE B.F. GOODRICH RUBBER COMPANY

Makers of the Celebrated Goodrich Automobile Tires—
“*Best in the Long Run.*”

AKRON, OHIO—The City of Goodrich

BUYERS' DIRECTORY

Names in black face type are Mining Congress Journal Advertisers.

INDEX

ACID, SULPHURIC

American Zinc & Chemicals Co., Langlois, Pa. American Zinc, Lead & Smelting Co., 55 Congress Street, Boston, Mass. Granby Mining & Smelting Co., Suite 1710, Third National Bank Building, St. Louis, Mo. Hegeler Zinc Co., Danville, Ill. Irvington Smelting & Refining Works, Irvington, N. J. New Jersey Zinc Company, 55 Wall Street, New York, N. Y. Western Chemical Co., Denver, Colo.

AGITATORS

Conklin, H. R., Joplin, Mo. Dore Company, Denver, Colo. Koering Cyaniding Process Co., Detroit, Mich.

AIR TUBING

Bemis Bro., Bag Co., St. Louis, Mo.

AIR COMPRESSORS

Egyptian Iron Works, Murphysboro, Ill. Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa. Sullivan Machinery Co., Chicago, Ill.

AMALGAMATORS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

ANEMOMETERS

Lettsome & Co., A. R., Lytton Building, Chicago, Ill. Taylor Instrument Co., Rochester, N. Y.

ARMATURES

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

APPARATUS (Ventilating—Cooling—Drying)

American Blower Co., Detroit, Mich.

ASSAYERS

Baker & Co., Newark, N. J. Indiana Laboratories Co., Hammond, Ind. Koering Cyaniding Process Co., Detroit, Mich. Lado & Co., Inc., 99 John Street, New York

AUTOMATIC (Mine Doors, Truck and Electric Switches)

American Mine Door Co., Canton, Ohio

BALANCES

Ainsworth & Sons, Wm., Denver, Colo. Denver Fire Clay Co., Denver, Colo.

15b

Thompson Balance Co., 808 Twentieth Street, Denver, Colo.

Troemner, Henry, 911 Arch Street, Philadelphia, Pa.

BAGS (Burlap, Ore, Powder, Fuse and Canvas)

Bemis Bro., Bag Co., St. Louis, Mo.

BEARINGS (Ball and Roller)

Hess-Bright Mfg. Co., Front and Erie Streets, Philadelphia, Pa.

Hyatt Roller Bearing Co., Newark, N. J.

S. K. F. Ball Bearing Co., Hartford, Conn.

BELTING (Conveyor, Elevator, Transmission)

Chicago Belting Co., Chicago, Ill. H. Channon Co., Chicago, Ill.

C. O. Bartlett & Snow & Co., Cleveland, Ohio.

Dick, Ltd., R. & J., Passaic, N. J.

Egyptian Iron Works, Murphysboro, Ill.

Goodrich Co., B. F., Akron, Ohio

Jeffrey Mfg. Co., 958 N. Fourth

Avenue, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Manhattan Rubber Co., Passaic, N. J. (Rubber Belting "Conductor.")

Chas. A. Schieren Co., (Duxbury) 51 Ferry Street, New York City.

Webster Mfg. Co., Tiffin, Ohio.

BELTING SUPPLIES

Chicago Belting Co., Chicago, Ill.

Chas. A. Schieren Co., 51 Ferry Street,

New York City.

BINS (Coke and Coal)

Jeffrey Mfg. Co., Columbus, Ohio

Link-Belt Company, Chicago, Ill.

BITS AND BIT STEEL

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

BITS (Machine—Steel)

Leetonia Tool Co., Leetonia, Ohio

BIT SHARPENERS

Sullivan Machinery Co., Chicago, Ill.

American Tempering Co., Springfield, Ill.

BLASTING SUPPLIES

Aetna Explosives Co., 2 Rector Street,

New York City

Atlas Powder Co., Wilmington, Del.

du Pont Powder Co., The E. I.

Wilmington, Del.

Equitable Powder Co., East Alton,

Ill.

Hercules Powder Co., Wilmington,

Del.

King Powder Co., Cincinnati, Ohio

United States Powder Co., Terre Haute, Ind.

BLOWERS

American Blower Co., Detroit, Mich.

Connersville Blower Co., Connersville, Ind.

GENERAL ELECTRIC CO., SCHENECTADY, N. Y.

Hendrie & Bolthoff M. & S. Co., Denver, Colo.

BLOWERS (Centrifugal)

Ingersoll-Rand Co., 11 Broadway, New York City

BOILERS

Abendroth & Root Mfg. Co., 45 Broadway, New York City

Allis-Chalmers Mfg. Co., Milwaukee, Wis. (feed pump.)

American Locomotive Co., 30 Church Street, New York City

Chandler & Taylor Co., Indianapolis, Ind.

Egyptian Iron Works, Murphysboro, Ill.

Hendrie & Bolthoff M. & S. Co., Denver, Colo.

BRATTICE CLOTH

H. Channon Co., Chicago, Ill.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Goodlin-Reid & Co., Cincinnati, Ohio

Lettome & Co., A. R., 1521 Lytton Building, Chicago, Ill.

Turner, Laurin H. & Co., Merchants,

160 W. Jackson Blvd., Chicago, Ill.

BREAKERS (Construction and Machinery)

Bartlett & Snow Mfg. Co., C. O., Cleveland, Ohio

Egyptian Iron Works, Murphysboro, Ill.

Jeffrey Mfg. Co., Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Vulcan Iron Works, Wilkes-Barre, Pa.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

Wilmett Engineering Co., Hazleton, Pa.

BRIQUETTING MACHINERY

General Briquetting Co., 25 Broad Street, New York City

Jeffrey Mfg. Co., Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Malcoomon Briquet Engr. Co., Chicago, Ill.

BUCKETS (Elevator)

C. O. Bartlett & Snow & Co., Cleveland, Ohio.

Cross Engineering Co., Carbondale, Pa.

Jeffrey Mfg. Co., Columbus, Ohio

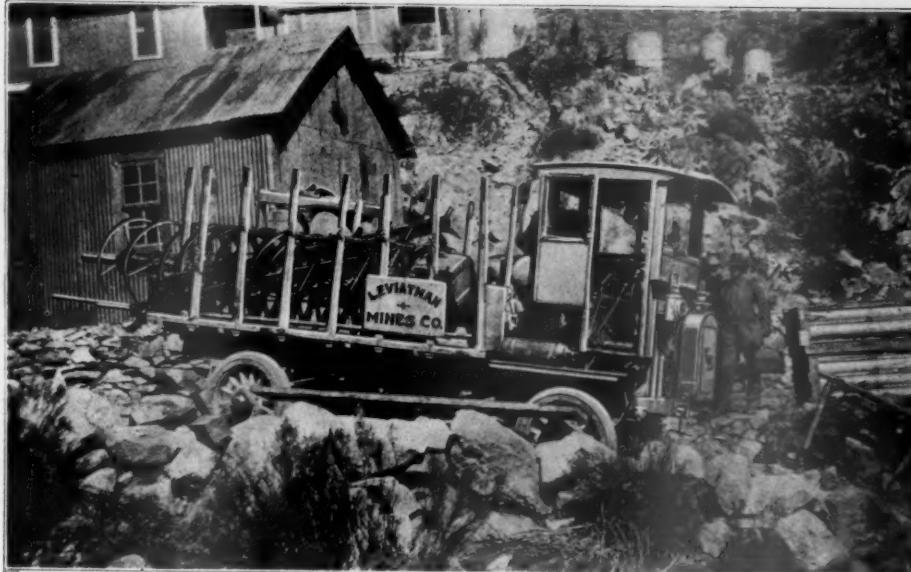
Link-Belt Company, Chicago, Ill.

Robins Conveying Belt Co., New York City

Webster Mfg. Co., Tiffin, Ohio

BUCKETS (Clam Shell)

Brown Hoisting Machinery Co., Cleveland, Ohio



DEPENDABILITY

**DAY IN
and
DAY OUT**
**F
W
D**
**TRUCKS
in
MINING
SERVICE**

TRUCKS in mining service must be on the job every minute. They must be able to do their work over any kind of roads.

All parts must be easily accessible and so standardized that new parts may be fitted without delay in case of emergency. These are some of the reasons that F-W-D Trucks are so widely used in mining service. The four-wheel drive principle as exclusively applied in F-W-D Trucks produces great dependability, efficiency, power and economy of operation. Added to these advantages is the ability to operate over roads practically impassable to rear drive trucks.

The construction is clearly explained in the F-W-D catalog which will be sent free upon request.

Four Wheel Drive Auto Co.
Dept. Z, CLINTONVILLE, WIS.

Buckets (Scrap and Dredge), Petroleum Iron Works, Sharon, Pa.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
 Link-Belt Company, Chicago, Ill.

CABLES (Connectors and Guides)
American MineDoor Co., Canton Ohio
 Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

CABLEWAYS
 Broderick & Bascom Rope Co., St. Louis, Mo.
Electrical Material Co., Chicago, Ill.
 Flory Mfg. Co., S. Bangor, Pa.
Jeffrey Mfg. Co., Columbus, Ohio
 Leschen & Son Rope Co., A., St. Louis, Mo.
Macomber & Whyte Rope Co., Kenosha, Wis.

CAGES
 Eagle Iron Works, Des Moines, Iowa
 Herzler & Henninger Machine Works, Belleville, Ill.
Holmes & Bros., Robt., Inc., Danville, Ill.
 Link-Belt Company, Chicago, Ill.
 Mining Safety Device Co., Bowerston, Ohio
 Ottumwa Iron Works, Ottumwa, Iowa
Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

CANS (Safety and Gasoline, Oily Waste)
 Harker Mfg. Co., 410 Pearl Street, Cincinnati, Ohio

CARBIDE
 Union Carbide Sales Co., New York, Chicago, San Francisco.

CAR DUMPS
 Brown Hoisting Machinery Co., Cleveland, Ohio
Jeffrey Mfg. Co., Columbus, Ohio
 Link-Belt Company, Chicago, Ill.
Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

CAR LOADERS
Egyptian Iron Works, Murphysboro, Ill.
 Link-Belt Company, Chicago, Ill.
 Webster Mfg. Co., Tiffin, Ohio

CAR AND CAR WHEELS
 Atlas Car & Mfg. Co., Cleveland, Ohio
 Duncan Foundry & Machine Works, Alton, Ill.
Egyptian Iron Works, Murphysboro, Ill.
 Fairmont Mining Machinery Co., Fairmont, W. Va.
 Lobbell Car Wheel Co., Wilmington, Del.
 Lehigh Car Wheel & Axle Co., Cataqua, Pa.
 Hockensmith Mine Car Co., Penn Station, Pa.
Phillips Mine & Mill Supply Co., Pittsburgh, Pa.
 Watt Mining Car Wheel Co., Barnesville, Ohio

CASTINGS
Egyptian Iron Works, Murphysboro, Ill.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
 Link-Belt Company, Chicago, Ill.

CHAINS
Frank Prox Co., Terre Haute, Ind.
 Link-Belt Company, Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio

CROSS ENGINEERING CO., CARBONDALE, PA.
CHEMISTS
 Hunt, Robt., & Co., Insurance Exchange, Chicago, Ill.
 Indiana Laboratories Co., Hammond, Ind.
 Koering Cyaniding Process Co., Detroit, Mich.
 Ledoux & Co., A. R., Inc., 99 John Street, New York City
 E. J. Longyear Co., Minneapolis, Minn.
 Richards, W. J., Denver, Colo.
 Western Chemical Co., Denver, Colo.

CHLORINATION
 Koering Cyaniding Process Co., Detroit, Mich.

CLASSIFIERS
 Dorr Company, Denver, Colo.

COAL CARS
 Watt Mining Car Wheel Co., Barnesville, Ohio

COAL COMPANIES
 Castner, Curran & Bullitt, Inc., 1 Broadway, New York City
 Central Coal & Coke Co., Keith & Perry Bldg., Kansas City, Mo.
 Cherokee Fuel Co., Kansas City, Mo.
 Crozier-Pocahontas Co., Philadelphia, Pa.
 Bickett Coal & Coke Co., McCormick Bldg., Chicago, Ill.
 Big Creek Colliery Co., Peoples Gas Bldg., Chicago, Ill.
 Bogle, W. S. & Co., Inc., Fisher Bldg., Chicago, Ill.
 Dering, J. K., Coal Co., McCormick Bldg., Chicago, Ill.
 Houston Coal Co.
 Jones & Adams Coal Co., Steger Block, Chicago, Ill.
 Keller, Theodore C.
 Keller, T. C., & Co., Chicago, Ill.
Lehigh Coal & Navigation Co., Philadelphia, Pa.
 Miami Coal Co.
 Moderwell, C. M. & Co., McCormick Bldg., Chicago, Ill.
 Old Ben Coal Corporation, Chicago.
 Peabody Coal Company, McCormick Bldg., Chicago, Ill.
 Rock Island Coal Mining Co., Chicago.
 Rutledge & Taylor, Chicago, Ill.
 Spring Valley Coal Co., Chicago, Ill.
Thorne, Neale & Co., Philadelphia, Pa.
 Worth Huskey Coal Co., Chicago, Ill.

COAL CRUSHERS
 C. O. Bartlett & Snow & Co., Cleveland, Ohio
Jeffrey Mfg. Co., Columbus, Ohio
 Link-Belt Company, Chicago, Ill.

COAL CUTTERS
Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio
 Sullivan Machinery Co., Chicago, Ill.

COAL HANDLING MACHINERY
 C. O. Bartlett & Snow & Co., Cleveland, Ohio.
 Brown Hoisting Machinery Co., Cleveland, Ohio.
Cross Engineering Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, Ohio
 Link-Belt Company, Chicago, Ill.
 Marion Machine, Fdy. & Supply Co., Scottsdale, Pa.
 Roberts & Schaefer Co., Chicago, Ill.

COAL LOAD CHECKING DEVICE
 Mines Otolok Co., Pittsburgh, Pa.

COAL MINING MACHINERY
Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio

COAL WASHING MACHINERY
Cross Engineering Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, Ohio
 Link-Belt Company, Chicago, Ill.
 Roberts & Schaefer Co., Chicago, Ill.

COCKS (Locomotive, Cylinder and Gauge)
 Nicholson, W. H., & Co., Wilkes Barre, Pa.
 Ohio Brass Co., Mansfield, Ohio

COMPANY STORES (Coupons)
Allison Coupon Co., Indianapolis, Ind.

COMPRESSORS, AIR
 Chicago Pneumatic Tool Co., Chicago, Ill.
Egyptian Iron Works, Murphysboro, Ill.
General Electric Co., Schenectady, N. Y.
 Ingersoll-Rand Co., 11 Broadway, New York City
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.
 Sullivan Machinery Co., Chicago, Ill.

CONCENTRATORS (Table)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Colorado Iron Works Co., Denver, Colo.
 Deister Concentrator Co., Fort Wayne Ind.
 Mine & Smelter Supply Co., Denver, Colo.

CONCRETE MIXERS
Standard Scale & Supply Co., 1631 Liberty Avenue, Pittsburgh, Pa.

CONDENSERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Cameron Steam Pump Works, A. S., New York City
 Ingersoll-Rand Co., 11 Broadway, New York City
 Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

Worthington Pump & Machinery Corp., 115 Broadway, New York City.

CONSTRUCTION ENGINEERS
 Roberts & Schaefer Co., Chicago, Ill.
 Link-Belt Company, Chicago, Ill.

CONTROLLERS
General Electric Co., Schenectady, N. Y.
 Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

CONVEYORS, BELT
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
 Link-Belt Company, Chicago, Ill.
 Power & Mining Machinery Co., 115 Broadway, New York City
 Robins Conveying Belt Co., New York
Stephens-Adamson Mfg. Co., Aurora, Ill.
 Webster Mfg. Co., Tiffin, Ohio

Electrical Material for Mining Purposes

We are specialists on electrical equipment for mines and mining work, including overhead trolley systems and track return.

G. E. Line Material and Rail Bonds Fort Wayne Electric Rock Drill Early's Commutator Cement

Bonds	Splicing Sleeves
Brackets	Strain Clamps
Crossings	Suspensions
Drills	Tools
Ears	Trolley Frogs
Insulators	Trolley Wire Supports
Roof Fastenings	Turnbuckles
Section Switches	

Send us your inquiries—you will receive prompt attention and satisfactory service throughout every transaction with us.

UNION ELECTRIC COMPANY
Electrical Headquarters PITTSBURGH, PA.

HIGHEST DEVELOPMENT IN CYANIDING
ACME OF PERFECTION IN COPPER LEACHING

THE KOERING METAL RECOVERY DRUM

constructed for Cyaniding, Hypolixivation, Copper Leaching, and Chlorination; combining Agitator, Filter and Washer; doing all functions between the grinding machinery and the precipitating device in one compact unit; accomplishing highest extraction in shortest period of time; saving labor, power, and chemicals.

*Most Economical Process for Treating Low Grade Ores
Not an Experiment—Employed in Practical Use*

HAVE YOU ANY FILTER TROUBLE?

We can solve your problem, no matter how difficult

Arrange for sending ore samples for assays and test treatments. We have the best equipped metallurgical, analytical and testing laboratory. Write for particulars.

KOERING CYANIDING PROCESS COMPANY

BEN R. KOERING, B. M. *President*,
Member American Electrochemical Society
Member American Mining Congress.

Dooly Block
SALT LAKE CITY, UTAH

CONVEYORS, CHAIN FLIGHT

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio
Wilmot Engineering Co., Hazelton, Pa.

CONVEYORS, COAL

Palmont Mining Machinery Co., Fairmont, W. Va.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.

CONVEYORS & ELEVATORS

C. O. Bartlett & Snow & Co., Cleveland, Ohio.
Jeffrey Mfg. Co., Columbus, Ohio
Link-Belt Company, Chicago, Ill.

CONVEYORS, PAN OR APRON

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio

CONVEYORS, SCREW

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio

COPPER LEECHING

Koering Cyaniding Process Co., Detroit, Mich.

CORE DRILLING

Ameling Prospecting Co., H. R., St. Louis, Mo. (core drill contractors)

E. J. Longyear Co., Minneapolis, Minn.
Pennsylvania Drilling Co., Pittsburgh Pa.

COUPLONS

Allison Coupon Co., Indianapolis, Ind.

COUPLINGS

Nicholson, W. H., & Co., Wilkes Barre, Pa.

CRUSHERS, COAL

C. O. Bartlett & Snow & Co., Cleveland, Ohio.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Lehigh Car Wheel & Axle Works, Catasauqua, Pa.
Link-Belt Company, Chicago, Ill.
Marion Machine, Fdy. & Supply Co., Scottsdale, Pa.
Pennsylvania Crusher Co., Philadelphia, Pa.

CRUSHING PLANTS, COKE

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio
Williams Patent Crusher & Pulverizer Co., Old Colony Building, Chicago, Ill.

CRUSHERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
C. O. Bartlett & Snow & Co., Cleveland, Ohio.
Braun Corporation, The, Los Angeles, Cal.
Braun-Knecht-Heimann Co., San Francisco, Cal.
Buchanan Co., Inc., C. G., New York
Colorado Iron Works Co., Denver, Colo.

Denver Engineering Works Co., Denver, Colo.
Denver Fire Clay Co., Denver, Colo.
Hendrie & Bothoff M. & S. Co., Denver, Colo.

Jeffrey Mfg. Co., The, 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.
Power & Mining Machinery Co., 115 Broadway, New York City

Smith Engineering Works, 3195 Locust Street, Milwaukee, Wis.

Sturtevant Mill Co., Boston, Mass.
Traylor Engineering & Mfg. Co., Allentown, Pa.

Webb City & Carterville Foundry & Machine Works, Webb City, Mo.

CRANES

Brown Hoisting Machinery Co., Cleveland, Ohio

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

CROSS-OVER DUMPS

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

CUTTER HEADS

Frank Prox Co., Terre Haute, Ind.

CYANIDING

Koering Cyaniding Process Co., Detroit, Mich.
Roessler & Hasslacher Chemical Co., New York City

DERRICKS AND DERRICK FITTINGS

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.
The Hayward Co., 50 Church Street, New York, N. Y.

DESIGNERS OF PLANTS

Brown Hoisting Machinery Co., Cleveland, Ohio

The Hayward Co., New York

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

McMyler Interstate Co., New York

DIAMOND CORE DRILL CONTRACTING

Ameling, H. R., Prospecting Co., St. Louis, Mo.

Hoffman Bros., Punxsutawney, Pa.
Longyear Co., E. J., Minneapolis, Minn.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Punxsutawney Drilling & Contracting Co., Punxsutawney, Pa.

Sullivan Machinery Co., Chicago, Ill.

DOORS, AUTOMATIC MINE

American Mine Door Co., Canton, Ohio

DREDGES

Flory Mfg. Co., S., Bangor, Pa.

Marion Steam Shovel Co., Marion, Ohio

New York Eng. Co., 2 Rector Street, New York

DRILLS, AIR

Howells Mining Drill Co., Plymouth, Pa.

Ingersoll-Rand Co., 11 Broadway
New York City

Sullivan Machinery Co., Chicago, Ill.
Whitcomb Co., Geo. D., Rochelle, Ill.

DRILLS, CORE

Ingersoll-Rand Co., 11 Broadway, New York City

Longyear Co., E. J., Minneapolis, Minn.

Sullivan Machinery Co., Chicago, Ill.

DRILLS, ELECTRIC

Chicago Pneumatic Tool Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howells Mining Drill Co., Plymouth, Pa.

Ingersoll-Rand Co., 11 Broadway, New York City

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

DRILLS, HAMMER

Chicago Pneumatic Tool Co., Chicago, Ill.

Cleveland Rock Drill Co., Cleveland, Ohio

Denver Rock Drill Mfg. Co., Denver, Colo.

Hardsco Wonder Drill Co., Ottumwa, Iowa

Ingersoll-Rand Co., 11 Broadway, New York

McKlem-Terry Drill Co., 230 Broadway, New York

Sullivan Machinery Co., Chicago, Ill.
Whitcomb Co., Geo. D., Rochelle, Ill.

DRILLS (Hand Operated Coal)

Ohio Brass Co., Mansfield, Ohio.

Leetonia Tool Co., Leetonia, Ohio

DRILLS, PISTON

Chicago Pneumatic Tool Co., Chicago, Ill.

Cochise Machine Co., Los Angeles, Cal.

Hardsco Wonder Drill Co., Ottumwa, Iowa

Ingersoll-Rand Co., 11 Broadway, New York

Sullivan Machinery Co., Chicago, Ill.

DRILLS, PROSPECTING

Ingersoll-Rand Co., 11 Broadway, New York

Longyear Co., E. J., Minneapolis, Minn.

New York Eng. Co., 2 Rector Street, New York

Sullivan Machinery Co., Chicago, Ill.

DRILLS, ROCK

General Electric Co., Schenectady, N. Y.

Howells Mining Drill Co., Plymouth, Pa.

International High Speed Steel Co., 99 Nassau Street, New York

Sullivan Machinery Co., Chicago, Ill.

Pneulectric Machine Co., Syracuse, N. Y.

DUMPS, CROSS-OVER

Fairmont Mining Machinery Co., Fairmont, W. Va.

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Philadelphia

Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

Sanford-Day Iron Works, Knoxville, Tenn.

Sullivan Machinery Co., Chicago, Ill.

DUMPS (Rotary)

Wood Equipment Co., Chicago, Ill.



AUTOMATIC RECLOSED CIRCUIT BREAKERS

are effecting great economies and increasing production for others. Why not interest yourself in their use? They afford the only complete circuit breaker protection available.

The
**Automatic Reclosing Circuit
Breaker Company**

COLUMBUS - - - OHIO

Coupon Books for **Mine Commissaries**



The best method of handling sales. They save time and money—Stop leaks—Prevent errors—In use for a quarter century.

*For Prices, Samples and
Catalogues, Write*

Allison Coupon Company
Indianapolis Indiana, U. S. A.

EVERLASTING LINE

Cutter Heads,
Chains,
Guides, etc.

For all makes of
Breast and Shortwall Machines

Send for Booklet

FRANK PROX CO.
TERRE HAUTE, IND.

J I G S

FOR ALL PURPOSES TO
WHICH THE JIGGING ART
CAN BE APPLIED

The largest capacity and heaviest jiggling machines made in the world—and entirely automatic in the removal of concentrates.

Will successfully handle ores up to $2\frac{1}{2}$ " round hole.

ROUGHING JIGS

G. H. ELMORE
Engineer
Philadelphia

DYNAMOS

Goodman Mfg. Co., Forty-eighth Place and Halsted Street, Chicago
Gregory Electric Co., Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELECTRICAL APPARATUS

General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co. East Pittsburgh, Pa.

ELECTRIC HOISTING MACHINERY

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Litchfield Foundry & Machine Co., Litchfield, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELECTRIC LOCOMOTIVES

Goodman Mfg. Co., Forty-eighth Place and Halsted Street, Chicago
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Ohio Brass Co., Mansfield, Ohio
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELECTRIC MINE SUPPLIES

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Electric Railway Equipment Co., Cincinnati, Ohio

ELECTRICAL SUPPLIES

Electric Service Supplies Co., Seventeenth and Cambric Streets, Philadelphia, Pa.
Electrical Material Co., Chicago, Ill.
General Electric Co., Schenectady, New York
Union Electric Co., Pittsburgh, Pa.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELEVATORS

Gifford-Wood Co., Hudson, N. Y.
Jeffrey Mfg. Co., Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio

ELEVATORS, BUCKET

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Webster Mfg. Co., Tiffin, Ohio

ELIMINATORS

Nicholson, W. H. & Co., Wilkes-Barre, Pa.

ENGINES, GAS AND GASOLINE

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., Chicago, Ill.
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

ENGINES (HOISTING AND HAULING)

Chandler & Taylor Co., Indianapolis, Ind.
Eagle Iron Works, Des Moines, Iowa
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Litchfield Foundry & Machine Co., Litchfield, Ill.

Ottumwa Box Car Loader Co., Ottumwa, Iowa

Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

ENGINES, OIL

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chandler & Taylor Co., Indianapolis, Ind.
Chicago Pneumatic Tool Co., Chicago, Ill.
Hendrie & Bolthoff M. & S. Co., Denver, Colo.
Ingersoll-Rand Co., 11 Broadway, New York.
National Transit Pump & Mach. Co., Oil City, Pa.

Nordberg Mfg. Co., Milwaukee, Wis.
Standard Scale & Supply Co., The, 1631 Liberty Ave., Pittsburgh, Pa.

ENGINES, STEAM

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chandler & Taylor Co., Indianapolis, Ind.
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

ENGINEERS

Ameling Prospecting Co., H. R., St. Louis, Mo.
Indiana Laboratories Co., Hammond, Ind.
Hunt, Robt., & Co., Insurance Exchange, Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Longyear, E. J., & Co., Minneapolis, Minn.
Pennsylvania Drilling Co., Pittsburgh Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Roberts & Schaefer Co., Chicago

ENGINEERING SPECIALTIES

Wm. Powell Co., Cincinnati, Ohio

ELEVATOR MACHINERY

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Ottumwa Box Car Loader Co., Ottumwa, Iowa
Robin Conveying Belt Co., New York

EXCAVATING MACHINERY

Brown Hoisting Machinery Co., Cleveland, Ohio
Link-Belt Company, Chicago, Ill.
The Hayward Co., 50 Church Street, New York, N. Y.

EXPLOSIVES

Aetna Explosives Co., 2 Rector Street, New York City
Atlas Powder Co., Wilmington, Del.
du Pont Powder Co., Wilmington, Del.
Equitable Powder Co., East Alton, Ill.
Hercules Powder Co., Wilmington, Del.
King Powder Co., Cincinnati, Ohio
United States Powder Co., Terre Haute, Ind.

EXTINGUISHERS, FIRE AND DRY POWDER

Harker Mfg. Co., 410 Pearl Street, Cincinnati, Ohio
Justrite Mfg. Co., Chicago, Ill.

FANS, VENTILATING

American Blower Co., Detroit, Mich.
Duncan Foundry & Machine Works, Alton, Ill.
General Electric Co., Schenectady, N. Y.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Ottumwa Iron Works, Ottumwa, Iowa
Stine, S. B., Osceola Mills, Pa.
Sullivan Machinery Co., Chicago, Ill.
Vulcan Iron Works, Wilkes-Barre, Pa.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

FEEDERS, ORE

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Webster Mfg. Co., Tiffin, Ohio

FITTINGS

Colorado Iron Works Co., Denver, Colo.
Koering Cyaniding Process Co., Detroit, Mich.
Oliver Continuous Filter Co., San Francisco, Cal.
Petroleum Iron Works, Sharon, Pa. (Sheet and Tank).

FLOTATION MACHINERY

Deister Machine Co., Ft. Wayne, Ind.

FLOTATION, OIL

Colorado Iron Works Co., Denver, Colo.
Oliver Continuous Filter Co., San Francisco, Cal.

FLOTATION OILS

Georgia Pine Turpentine Co., 160 Perry Street, New York City
Pensacola Tar & Turpentine Co., Gulf Point, Fla.

FURNACES, ASSAY

Braun Corp., The, Los Angeles, Cal.
Braun-Knecht-Heimann Co., San Francisco, Cal.
Denver Fire Clay Co., Denver, Colo.
Mine & Smelter Supply Co., Denver, Colo.

FURNACES, BULLION MELTING

Braun Corporation, The, Los Angeles, Cal.
Braun-Knecht-Heimann Co., San Francisco, Cal.
Denver Fire Clay Co., Denver, Colo.
Monarch Engineering & Mfg. Co., Baltimore, Md.

FURNACE GRATES

Illinois Stoker Co., Alton, Ill.

FURNACES, MECHANICAL ROASTING

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Dwight & Lloyd Sintering Co., Inc., New York City
General Chemical Co., 25 Broad Street, New York, N. Y.
Wedge Mechanical Furnace Co., 115 Chestnut Street, Philadelphia, Pa.

FURNACES, SMELTING

Colorado Iron Works Co., Denver, Colo.

Irvington Smelting and Refining Works

Buyers, Smelters and Refiners of Gold, Silver, Lead, Copper and Platinum Ores, Sweeps and Bullion

Manufacturers of Copper Sulphate

IRVINGTON :: :: NEW JERSEY

N. Y. OFFICE—Charles Engelhard
Hudson Terminal Building 30 Church Street

LEDOUX & COMPANY, Inc.

NEW YORK

Sample and Assay Ores and Metals

Having representatives at buyers' works we receive, weigh, sample and assay consignments representing the sellers in all transactions. We are not dealers or refiners.

Laboratory and Office: 99 John Street

Robert W. Hunt
Jas. C. Hallsted

Jno. J. Cone
D. W. McNaugher

ROBERT W. HUNT & CO.

Engineers

Bureau of Inspection, Tests and Consultation
2200 Insurance Exchange.
Chicago

Mining Engineers and Chemists
Inspection Construction Materials and
Machinery at Point of Manufacture.

DENVER QUARTZ MILLS

AND DENVER STEEL CRUSHERS

have that kind of reliability that constantly and continuously keeps on being reliable.

The Denver Quartz Mill & Crusher Co.
216-17 Colorado Bldg., Denver, Colo., U.S.A.

ILLINOIS ZINC COMPANY

PERU, ILLINOIS

Manufacturers of

Selected Brass SPELTER, Sulphuric Acid

Rollers of ZINC in SHEETS

PLATES and STRIPS

Special sizes of zinc cut to order in squares and circles, battery plates, etchers', engravers' and lithographers' plates. Paper and card makers' sheets.

W. Fisher, Eastern Sales Agent

203 Broadway

Tel. Cortland 1981 NEW YORK

Phelps Dodge Corporation

99 JOHN STREET

NEW YORK

COPPER

"C * Q"
ELECTROLYTIC

"P. D. Co."
CASTING

E. J. LONGYEAR COMPANY

Exploring Engineers

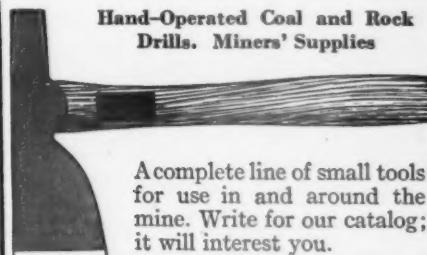
Diamond Drill Contractors and
Manufacturers

Examination

Exploration
and Development
of
Mineral Lands

MINNEAPOLIS MINNESOTA

Hand-Operated Coal and Rock
Drills. Miners' Supplies



A complete line of small tools for use in and around the mine. Write for our catalog; it will interest you.

The Leetonia Tool Co., Leetonia, Ohio, U.S.A.

Traylor Eng. & Mfg. Co., Allentown, Lidgerwood Mfg. Co., 96 Liberty Street, New York

Ottumwa Iron Works, Ottumwa, Iowa

Nordberg Mfg. Co., Milwaukee, Wis.

Pneumelectric Machine Co., Syracuse, N. Y.

Vulcan Iron Works, Wilkes-Barre, Pa.

Wellman Seaver Morgan Co., The, Cleveland, Ohio

GEARS

Egyptian Iron Works, Murphysboro, Ill.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Falk Co., The, Milwaukee, Wis.

Jeffrey Mfg. Co., Columbus, Ohio

General Electric Co., Schenectady, N. Y.

Link-Belt Company, Chicago, Ill.

Webster Mfg. Co., Tiffin, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

GENERATORS AND GENERATING SETS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

General Electric Co., Schenectady, N. Y.

Morgan-Gardner Electric Co., 68 E. Adams Street, Chicago, Ill.

Ridgway Dynamo & Engine Co., Ridgway, Pa.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

GEOLOGISTS

Associated Geological Engineers, Pittsburgh, Pa.

GRATES

Illinois Stoker Co., Alton, Ill.

GREASES

Dixon Crucible Co., Joseph, Jersey City, N. J.

Keystone Lubricating Co., Philadelphia, Pa.

Ohio Grease Co., Loudenville, Ohio

Sanford-Day Iron Works, Knoxville, Tenn.

GUIDES

Frank Prox Co., Terre Haute, Ind.

HAMMERS, PNEUMATIC

Sullivan Machinery Co., Chicago, Ill.

HAULING ROPES

Hazard Mfg. Co., Wilkes-Barre, Pa.

Macomber & Whyte Rope Co., Kenosha, Wis.

HEADLIGHTS, ARC AND INCANDESCENT

Electric Service Supplies Co., Seventeenth and Cambria Streets, Philadelphia, Pa.

General Electric Co., Schenectady, N. Y.

Ohio Brass Co., Mansfield, Ohio

HITCHINGS

Egyptian Iron Works, Murphysboro, Ill.

Macomber & Whyte Rope Co., Kenosha, Wis.

HOISTS, ELECTRIC

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Denver Engineering Works Co., Denver, Colo.

Flory Mfg. Co., S., Bangor, Pa.

General Electric Co., Schenectady, N. Y.

Hendrie & Bolthoff M. & S. Co., Denver, Colo.

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Lidgerwood Mfg. Co., 96 Liberty Street, New York

Ottumwa Iron Works, Ottumwa, Iowa

Nordberg Mfg. Co., Milwaukee, Wis.

Pneumelectric Machine Co., Syracuse, N. Y.

Vulcan Iron Works, Wilkes-Barre, Pa.

Wellman Seaver Morgan Co., The, Cleveland, Ohio

HOISTS, PORTABLE

Chicago Pneumatic Tool Co., Chicago, Ill.

Hendrie & Bolthoff M. & S. Co., Denver, Colo.

Ingersoll-Rand Co., 11 Broadway, New York

Link-Belt Company, Chicago, Ill.

Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

HOISTS, STEAM

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Lidgerwood Mfg. Co., 96 Liberty Street, New York

Holmes, Robt., & Bros., Inc., Danville, Ill.

Nordberg Mfg. Co., Milwaukee, Wis.

Ottumwa Iron Works, Ottumwa, Iowa

Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

Sullivan Machinery Co., Chicago, Ill.

Vulcan Iron Works, Wilkes-Barre, Pa.

HOISTING ROPES

Hazard Mfg. Co., Wilkes-Barre, Pa.

Macomber & Whyte Rope Co., Kenosha, Wis.

HOSE, AIR

Cleveland Rock Drill Co., Cleveland, Ohio

Denver Rock Drill Mfg. Co., Denver, Colo.

Egyptian Iron Works Murphysboro, Ill.

Goodrich Co., The B. F., Akron, Ohio

Hardsoc Wonder Drill Co., Ottumwa, Iowa

HOSE (Rubber)

Quaker City Rubber Co., Philadelphia, Pa.

HOSE RACKS

Harker Mfg. Co., 410 Pearl Street, Cincinnati, Ohio

HOTELS

Brown Palace, Denver, Colo.

INSTRUMENTS, SURVEYING

Ainsworth & Sons, Wm., Denver, Colo.

Alteneder & Sons, T., Philadelphia, Pa.

Heller & Brightly, Philadelphia, Pa. (Engineering, Surveying and Astronomical)

INSULATING MATERIAL, ELECTRIC

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Electric Railway Equipment Co., Cincinnati, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATORS, FEEDER WIRE

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Electric Railway Equipment Co., Cincinnati, Ohio

Electric Service Supplies Co., Seventeenth and Cambria Streets, Philadelphia, Pa.

Ohio Brass Co., Mansfield, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATORS, SECTION

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Electric Railway Equipment Co., Cincinnati, Ohio

Electric Service Supplies Co., Philadelphia, Pa.

Ohio Brass Co., Mansfield, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATED WIRE and CABLE

Hazard Mfg. Co., Wilkes-Barre, Pa.

American Steel & Wire Co., Chicago.

JIGS

G. H. Elmore, 312 Parkway Bldg., Philadelphia, Pa.

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Philadelphia

Webster Mfg. Co., Tiffin, Ohio

KITS (Roadmen's)

Leetonia Tool Co., Leetonia, Ohio

LAMPS, ACETYLENE

Harker Mfg. Co., 410 Pearl Street, Cincinnati, Ohio

Justrite Mfg. Co., Chicago, Ill.

Milburn Co., Alex., Baltimore, Md.

Simmons Co., John, 34 Thirty-fifth Street, Brooklyn, N. Y.

LAMPS, ARC AND INCANDESCENT

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LAMPS, ELECTRIC

Edison Storage Battery Co., Orange, N. J.

General Electric Co., Schenectady, N. Y.

Leetonia Tool Co. (Carbide), Leetonia, Ohio

Mine Safety Appliances Co., Pittsburgh, Pa.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LAMPS, SAFETY

Ackroyd & Best, Ltd., Pittsburgh, Pa.

American Safety Lamp & Mine Supply Co., Scranton, Pa.

Concordia Safety Lamp Co., Pittsburgh, Pa.

Justrite Mfg. Co., Chicago, Ill.

Leetonia Tool Co., Leetonia, Ohio

Mine Safety Appliances Co., Pittsburgh, Pa.

Wolf Safety Lamp Co., New York City

LAMPS, SAFETY CAP

Edison Storage Battery Co., Orange, N. J.

LEATHER BELTING

Chicago Belting Co., Chicago, Ill.

Chas. A. Schieren Co., New York City, (Duxbak).

Laubenstein Manufacturing Company

Manufacturers of

PERFORATED METAL PLATES

ASHLAND

PENNA.

Wilmot Engineering Company

Hazleton, Pennsylvania

Manufacturers of

Improved Breaker Machinery
for Conveying, Crushing, Sizing
and Cleaning Anthracite Coal

Convert your fine silt or slack
into Briquettes by our

DUTCH PROCESS

It's a simple and efficient method

Write for Bulletins, Series A

THE GENERAL BRIQUETTING CO.

25 Broad Street

New York

The
WEST VIRGINIA
RAIL CO.

Manufacturers

Light Steel Rails
and Accessories

12, 16, 20, 25, 30, 35,
40, 45 lbs. per yd.

Mills and General
Offices
Huntington,
W. Va.



PRESERVE Your Timber and Structures

by our TIME-TESTED METHODS

Write for Bulletin No. 12

"Mine Timbers"

Photos are Same wood, Same exposure

MONONGAHELA WOOD PRESERVING CO.

TREATED Fulton Bldg., Pittsburgh, Pa. UNTREATED



AINSWORTH

PRECISION BALANCES and ENGINEER-
ING INSTRUMENTS Are Standard for
Accuracy, Workmanship and Finish.

Send for Catalog of Balances. Also Catalog
of Surveying Instruments and Bulletin of the
Brunton Patent Pocket Transit.

WM. AINSWORTH & SONS
Denver, Colorado, U. S. A.

PLEASE write us for blue print and specifica-
tions for **Double Forges** to heat mining ma-
chine bits. Your interest in practical methods of
heating and making bits is earnestly solicited.

AMERICAN TEMPERING CO.
Springfield, Illinois, U. S. A.

RAILS

500 tons new first quality 60 lb. rails
200 tons new first quality 56 lb. rails
150 tons new first quality 50 lb. rails
1000 tons 75 lb. relaying rails

Also a complete line of new frogs, switches,
bolts, spikes, etc.

Granville Supply Co.

915 Olive Street St. Louis, Mo.

JOPLIN RUHL & STEWART
Mining Engineers

MISSOURI

LEATHER (Valves, packings, specialties)

Chicago Belting Co., Chicago, Ill.
Chas. A. Schieren Co., New York City
Litchfield Foundry & Machine Co.,
Litchfield, Ill.

Wellman Seaver Morgan Co., The, Cleveland, Ohio

LOCOMOTIVES (Compressed Air—Fireless Steam)

Porter Co., H. K., Pittsburgh, Pa.

LOCOMOTIVES, ELECTRIC

Atlas Car & Mfg. Co., Cleveland, Ohio
Baldwin Locomotive Works, Philadelphia, Pa.

General Electric Co., Schenectady, N. Y.

Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Morgan-Gardner Electric Co., 68 E. Adams Street, Chicago, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LOCOMOTIVES, GASOLINE

Vulcan Iron Works, Wilkes-Barre, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.

LOCOMOTIVES, RACK RAIL

Goodman Mfg. Co., Chicago, Ill.

LOCOMOTIVES, STEAM

American Locomotive Co., 30 Church Street, N. Y.
Baldwin Locomotive Works, Philadelphia, Pa.
Porter Co., H. K., Pittsburgh, Pa.

Vulcan Iron Works, Wilkes-Barre, Pa.

LOCOMOTIVES, STORAGE BATTERIES

Atlas Car & Mfg. Co., Cleveland, Ohio
Edison Storage Battery Co., Orange, N. J.

General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Chicago, Ill.
Ironton Engine Co., Ironton, Ohio

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

Whitcomb Co., Geo. D., Rochelle, Ill.

LUBRICANTS

Dixon Crucible Co., Joseph, Jersey City, N. J.
Keystone Lubricating Co., Philadelphia, Pa.

LUBRICATORS

Imperial Brass Co., 537 S. Dearborn St., Chicago, Ill.

Keystone Lubricating Co., Philadelphia, Pa.

Ohio Grease Co., Loudenville, Ohio

Wm. Powell Co., Cincinnati, Ohio
Whitcomb Co., Geo. D., Rochelle, Ill.

MILLS, STAMP

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Denver Engineering Works Co., Denver, Colo.

Hendrie & Bolthoff M. & S. Co., Denver, Colo.

Power & Mining Machy. Co., 115 Broadway, N. Y.

Taylor Eng. & Mfg. Co., Allentown, Pa.

MINE DOORS, AUTOMATIC

American Mine Door Co., Canton, Ohio

MINING DRILLS

International High Speed Steel Co., 99 Nassau Street, New York

MINING MACHINES, CHAIN AND PUNCHER

Goodman Mfg. Co., Chicago, Ill.
Ingersoll-Rand Co., 11 Broadway, New York City

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Morgan-Gardner Electric Co., Chicago, Ill.

Sullivan Machinery Co., Chicago, Ill.
Whitcomb Co., Geo. D., Rochelle, Ill.

MINING MACHINES

Duncan Foundry & Machine Works, Alton, Ill.

Goodman Mfg. Co., Forty-eighth Place and Halsted Street, Chicago
Whitcomb, George D., Co., Rochelle, Ill.

MINING MACHINES (Electric)

Goodman Mfg. Co., Chicago

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

MINING MACHINERY

C. O. Bartlett & Snow Co., Cleveland, Ohio.

H. Channon Co., Chicago, Ill.
Denver Quartz Mill & Crusher Co., Denver, Colo.

Koering Cyaniding Process Co., Detroit, Mich.
Litchfield Foundry & Machine Co., Litchfield, Ill. (Hoisting and Hauling Machinery)

MINE CAR HITCHINGS

Egyptian Iron Works, Murphysboro, Ill.

Hockenamith Wheel & Mine Car Co., Penn Station, Pa.

Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

Macomber & Whyte Rope Co., Kenosha, Wis.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

MINE TIMBER

Egyptian Timber Co., St Louis, Mo.
Monongahela Wood Preserving Co., Pittsburgh, Pa.

MINE CAR TRUCKS

Duncan Foundry & Machine Works, Alton, Ill.

Egyptian Iron Works, Murphysboro, Ill.

Hockenamith Wheel & Mine Car Co., Penn Station, Pa.

Phillips Mine & Mill Supply Co., Pittsburgh, Pa.

Hertzler & Henninger Machine Works, Belleville, Ill.

MINE SIGNALS

American Mine Door Co., Canton, Ohio

MINE SHAFTS

Cement-Gun Construction Co., Chicago, Ill.

MINE SUPPLIES

Egyptian Iron Works, Murphysboro, Ill.

Leetonia Tool Co., Leetonia, Ohio

MINING EQUIPMENT

Crane & Co., Chicago, Ill.

Egyptian Iron Works, Murphysboro, Ill.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Electric Railway Equipment Co., Cincinnati, Ohio

Imperial Brass Co., 525 S. Racine Ave., Chicago, Ill.

Leetonia Tool Co., Leetonia, Ohio

Wood Equipment Co., Cincinnati, Ohio

MINING MACHINE ROPE

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Macomber & Whyte Rope Co., Kenosha, Wis.

MOTORS

General Electric Co., Schenectady, N. Y.

Goodman Mfg. Co., Chicago, Ill.

Ridgway Dynamo & Engine Co., Ridgway, Pa.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

MOTOR TRUCKS

Four Wheel Drive Co., Clintonville, Wis.

General Motors Truck Co., Pontiac, Mich.

Winther Motor Truck Co., Kenosha, Wis.

OIL AND GREASE CUPS

Keystone Lubricating Co., Philadelphia, Pa.

Lunkenheimer Co., Cincinnati, Ohio

Ohio Grease Co., Loudenville, Ohio
Wm. Powell Co., Cincinnati, Ohio

OIL STORAGE TANKS

Petroleum Iron Works, Sharon, Pa.

ORE, BUYERS AND SELLERS OF

American Smelting & Refining Co., 120 Broadway, New York

American Metal Co., New York City

American Zinc, Lead & Smelting Co., 55 Congress Street, Boston, Mass.

American Zinc & Chemical Co., Langlois, Pa.

Arizona Copper Co., Clifton, Ariz.

Arkansas Zinc & Smelting Corp., 42 Broadway, New York

Balbach Smelting & Refining Co., Newark, N. J.

Barlesville Zinc Co., 52 Broadway, New York

Bear, Sondeheimer & Co., 61 Broadway, New York

Ducktown Sulphur, Copper & Iron Co., Ltd., Isabella, Tenn.

Edgar Zinc Co., Boatmen's Bank Bldg., St. Louis, Mo.

Granby Mining & Smelting Co., Suite 1710, Third National Bank Building, St. Louis, Mo.; 165 Broadway, New York, N. Y.

Grissell Chemical Co., The, Cleveland, Ohio

Hardy, Charles, 50 Church Street, New York

Illinois Zinc Co., Peru, Ill.

Irvington Smelting and Refining Works, Irvington, N. J.

International Smelting Co., 42 Broadway, New York

Leavitt & Co., C. W., 30 Church Street, New York

We Can Save You Money—

100% on lubricators—because we furnish all you need absolutely free.

35% on cylinder oil—because Ohio Cylinder Grease lasts 3 to 5 times as long.

50% on packing—because Ohio Cylinder Grease more than doubles its life.

This grease also Increases Power—Decreases Repairs and keeps exhaust free from oil. It will give you better and more economical lubrication than any oil made.

Hundreds of plants are using it—Why not you? Testing outfit is furnished free—just drop us a line and say you would like to Try Ohio Cylinder Grease.

THE OHIO GREASE CO., Box 1015, Loudonville, O.

The Accumulated Skill and Experience of 25 Years

In selecting and seasoning Redwood and Douglas Fir and in manufacturing

WOOD TANKS

and Continuous Stave
and Machine-Banded

WOOD PIPE

goes into both Pacific Tanks and Pipes

The result—added value to you.
May we not go into full details?

Write

Pacific Tank & Pipe Co.

ESTABLISHED 1890

Factories: San Francisco, Los Angeles
Offices: 304 Market Street, San Francisco
903 Trust and Savings Building, Cor. 6th
and Spring Streets, Los Angeles

CHARLES A. CLARK

President

B. K. LEACH

Vice-President

JOHN FUHRER

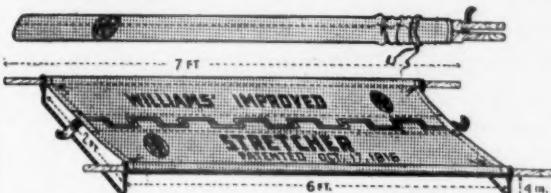
Secretary-Treasurer

EGYPTIAN TIMBER CO.

414 Rialto Building
St. Louis, Mo.

Everything in the Way of
TIMBER FOR MINES

"NEEDED WHEREVER MEN ARE HURT"



WILLIAMS' IMPROVED STRETCHER COMPANY WHEELING, W. VA.
U. S. A.

Cut shows new shape handle.
We couldn't improve the
stretcher so we improved the
handle. Our stretcher reduces
suffering.

Send for Booklet.

Matthiessen & Hegeler Zinc Co., Sullivan Machinery Co., Chicago, Ill.
Le Salle, Ill.
Nichols Copper Co., 25 Broad Street, New York
Pennsylvania Smelting Co., Pittsburgh, Pa.
Phelps, Dodge Corporation, New York City
Philip Bros., 29 Broadway, New York
Primos Chemical Co., Primos, Delaware Co., Pa.
St. Joseph Lead Co., 61 Broadway, New York
United Metals Selling Co., 42 Broadway, New York
United States Smelting, Refining & Mining Co., 55 Congress Street, Boston.

ORE CRUSHERS
Denver Quartz Mill & Crusher Co., Denver, Colo.

ORE FEEDERS
Denver Quartz Mill & Crusher Co., Denver, Colo.
Link-Belt Company, Chicago, Ill.

ORE SAMPLERS
Beach & Co., Denver, Colo.

PERFORATED METALS
Chicago Perforating Co., Chicago, Ill.
Cross Engineering Co., Carbondale, Pa.
Laubenstein Mfg. Co., Ashland, Pa.

PICKING TABLES
Fairmont Mining Machinery Co., Fairmont, W. Va.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Morrow Mfg. Co., Wellston, Ohio

PIPE, CAST IRON
Davis Supply Co., Chicago, Ill.
Hockensmith Mine Car Co., Penn Station, Pa.

PIPE (Wood)
Pacific Tank & Pipe Co., San Francisco, Cal.

PIPE COVERING
Highland Chemical Products Co., Connellsville, Pa.
Standard Paint Co., Woolworth Building, New York

PIPE, SPIRAL RIVETED
Abendroth & Root Mfg. Co., 45 Broadway, N. Y.
Petroleum Iron Works, Sharon, Pa.

PIPE, WROUGHT IRON
Byers Co., A. M., 235 Water Street, Pittsburgh, Pa.
Davis Supply Co., Chicago, Ill.

POWER TRANSMISSION MACHINERY
W. E. Caldwell Co., Louisville, Ky.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Mons Chain Co., Ithaca, N. Y.
Webster Mfg. Co., Tiffin, Ohio

PRECIPITATING DEVICES
Koering Cyaniding Process Co., Salt Lake City, Utah.

PROSPECTING DRILLS
Annealing Prospecting Co., The H. R., St. Louis, Mo.
Ingersoll-Rand Co., New York, N. Y.
Longyear Company, E. J., Minneapolis, Minn.
New York Eng. Co., New York, N. Y.

Aldrich Pump Co., Allentown, Pa.
Cameron Steam Pump Works, A. S., New York City
Egyptian Iron Works, Murphysboro, Ill.
Keystone Driller Co., Beaver Falls, Pa.
Goulds Mfg. Co., The Seneca Falls, N. Y.
Platt Iron Works, Dayton, Ohio
Shine, S. B., Oscoda Mills, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City

PUMPS, CENTRIFUGAL
Aldrich Pump Co., Allentown, Pa.
Cameron Steam Pump Works, A. S., New York City
Egyptian Iron Works, Murphysboro, Ill.
Keystone Driller Co., Beaver Falls, Pa.
Goulds Mfg. Co., The Seneca Falls, N. Y.
Platt Iron Works, Dayton, Ohio
Shine, S. B., Oscoda Mills, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City

PUMPS, MILL
Aldrich Pump Co., Allentown, Pa.
Cameron Pump Works, 11 Broadway, New York
The Deming Co., Salem, Ohio
Goulds Mfg. Co., The Seneca Falls, N. Y.
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.
Traylor Eng. & Mfg. Co., Allentown, Pa.

PUMPS, MINE
Aldrich Pump Co., Allentown, Pa.
Egyptian Iron Works, Murphysboro, Ill.
Alberger Pump & Condenser Co., New York
Cameron Pump Works, 11 Broadway, New York
The Deming Co., Salem, Ohio
Goulds Mfg. Co., The Seneca Falls, N. Y.
Hendrie & Bolthoff M. & S. Co., Denver, Colo.
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.
Wood & Co., R. D., Philadelphia, Pa.

PUMPS, PNEUMATIC AIR LIFT
Aldrich Pump Co., Allentown, Pa.
Goulds Mfg. Co., The Seneca Falls, N. Y.
Sullivan Machinery Co., Chicago, Ill.

PUMPS, POWER
Aldrich Pump Co., Allentown, Pa.
Cameron Steam Pump Works, A. S., New York City
The Deming Co., Salem, Ohio
Fairmont Mining Machinery Co., Fairmont, W. Va.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., The Seneca Falls, N. Y.
Platt Iron Works, Dayton, Ohio
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City

PUMPS, STEAM
Aldrich Pump Co., Allentown, Pa.
Cameron Steam Pump Works, A. S., New York City
Egyptian Iron Works, Murphysboro, Ill.
McGowan Co., John H., Cincinnati, Ohio
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

PUMPS, VACUUM
Aldrich Pump Co., Allentown, Pa.
Cameron Steam Pump Works, A. S., New York City

The Deming Co., Salem, Ohio
Egyptian Iron Works, Murphysboro, Ill.
Ingersoll-Rand Co., 11 Broadway, New York City
Platt Iron Works, Dayton, Ohio
Washington Pump & Machinery Corp., 115 Broadway, New York City

QUARRYING MACHINERY
Sullivan Machinery Co., Chicago, Ill.

RAILS
Buckeye Rolling Mill Co., Steubenville, Ohio

RAIL BONDS
Electric Service Supplies Co., Seventeenth and Cambria Streets, Philadelphia, Pa.
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

REPAIR PARTS (Coal Machinery)
Buettner & Shelburne Mach. Co., Terre Haute, Ind.

RESPIRATORS
Goodrich Co., The B. F., Akron, Ohio

ROCK CRUSHERS
Denver Quartz Mill & Crusher Co., Denver, Colo.

ROCK DRILLS (Steel)
International High Speed Steel Co., 99 Nassau Street, New York

ROPE, MANILA AND JUTE
American Steel & Wire Co., Chicago, New York
Broderick & Bascom Rope Co., St. Louis, Mo.
Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Macomber & Whyte Rope Co., Kenosha, Wis.
Waterbury Co., 80 South Street, New York City
Wright Wire Co., Worcester, Mass.

ROPE, TRANSMISSION
American Steel & Wire Co., Chicago, New York
Broderick & Bascom Rope Co., St. Louis, Mo.
W. E. Caldwell Co., Louisville, Ky.
Hazard Mfg. Co., Wilkes-Barre, Pa.
Leschen & Sons Rope Co., A., St. Louis, Mo.
Waterbury Co., 80 South Street, New York City
Webster Mfg. Co., Tiffin, Ohio

ROPE, WIRE
American Steel & Wire Co., Chicago, New York
Broderick & Bascom Rope Co., St. Louis, Mo.
Egyptian Iron Works, Murphysboro, Ill.
Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Hazard Mfg. Co., Wilkes-Barre, Pa.
Leschen & Sons Rope Co., A., St. Louis, Mo.
Macomber & Whyte Rope Co., Kenosha, Wis.
Waterbury Co., 80 South Street, New York City

THE LEHIGH COAL AND NAVIGATION COMPANY

Philadelphia, Pa.

MINERS OF



ANTHRACITE COAL

“The Best Since 1820”

SALES OFFICES:

Philadelphia, New York, Boston, Springfield, Syracuse, Buffalo

Thorne, Neale & Company

Incorporated

601-610 Stephen Girard Building, Philadelphia, Penna.

Temple Collieries—
Harry E., L. V.; Forty
Fort, L. V.; Mount
Lookout, L. V. or D.,
L. & W.; Lackawanna,
D., L. & W. or Erie.

Schuylkill Collieries—
Buck Run, P. & R.;
New Castle, P. R. R.

**ANTHRACITE
AND
BITUMINOUS
COALS**

Agents for
Pardee Bros. & Co.
Lattimer-Lehigh

Bituminous—Sonman
Shaft, “B” Vein; Son-
man Slope, “E” Vein.

Sonman Smithing—1½-inch Screened, Low Sulphur, Spongy Coke
SHIPMENTS—RAIL OR WATER

CHAS. E. FERNBERG, *General Sales Agent*
New York Office: 17 Battery Place

Baltimore

Boston

Chicago

Buffalo

Mauch Chunk

Cable Address: “THORNEALE”

RUBBER GOODS (Hose, Air Drills, etc.)

H. Channon Co., Chicago, Ill.
Egyptian Iron Works, Murphysboro, Ill.
Manhattan Rubber Co., Passaic, N. J.
Peerless Rubber Co., New York City
Quaker City Rubber Co., Philadelphia, Pa.

SAFETY EQUIPMENT

Mine Safety Appliances Co., Pittsburgh, Pa.

SCALES

Streeter-Amet Weighing & Recording Co., 4101-4105 Ravenswood Avenue, Chicago, Ill.
Standard Scale & Supply Co., The, 1631 Liberty Avenue, Pittsburgh, Pa.

SCREENS AND PERFORATED SHEETING

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Perforating Co., Chicago, Ill.
Cross Engineering Co., Carbondale, Pa.
Egyptian Iron Works, Murphysboro, Ill.
Harrington & King Perforating Co., 628 North Union Avenue, Chicago, Ill.
Holmes & Bros., Inc., Robt., Danville, Ill.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Lauhenstein Mfg. Co., Ashland, Pa.
Link-Belt Company, Chicago, Ill.
Roberts & Schaefer Co., Chicago, Ill.
Webster Mfg. Co., Tiffin, Ohio
Williams Patent Crusher & Pulverizer Co., Old Colony Building, Chicago, Ill.

SCREENS, REVOLVING

Chicago Perforating Co., Chicago, Ill.
Duncan Foundry & Machine Works, Alton, Ill.
Egyptian Iron Works, Murphysboro, Ill.
Harrington & King Perforating Co., The, 620 N. Union Avenue, Chicago, Ill.
Hendrie & Bolthoff M. & S. Co., Denver, Colo.
Link-Belt Company, Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Traylor Eng. & Mfg. Co., Allentown Pa.
Webster Mfg. Co., Tiffin, Ohio

SEPARATORS (Steam)

Nicholson & Co., W. H., Wilkes Barre, Pa.

SHAKER PLATES

Cross Engineering Co., Carbondale, Pa.
Lauhenstein Mfg. Co., Ashland, Pa.

SHAFTS

Cement-Gun Construction Co., Chicago, Ill.

SHARPENERS, DRILL

Denver Rock Drill Mfg. Co., Denver, Colo.
Hardrock Wonder Drill Co., Ottumwa, Iowa
Ingersoll-Rand Co., 11 Broadway, New York
Sullivan Machinery Co., Chicago, Ill.

SHOVELS, STEAM

Ball Engine Co., Erie, Pa.
Keystone Driller Co., Beaver Falls, Pa.
Marion Steam Shovel Co., Marion, Ohio
Tew Automatic Shovel Co., Lorain, Ohio

SHOVELS

Wyoming Shovel Co., Wyoming, Pa.

SIGNALS, MINE

Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

SMELTERS

American Smelting & Refining Co., 120 Broadway, New York
American Zinc, Lead & Smelting Co., 55 Congress Street, Boston, Mass.
Bell, Sontheimer & Co., Inc., 61 Broadway, New York
Illinois Zinc Co., Peru, Ill.
International Smelting Co., 42 Broadway, New York
Irvington Smelting & Refining Works, Irvington, N. J.

SPELTER

Illinois Zinc Co., Peru, Ill.

SPLICE, CABLE

American Mine Door Co., Canton, Ohio
Ohio Brass Co., Mansfield, Ohio

SPLICE, INSULATOR

American Mine Door Co., Canton, Ohio

SPLICE, TROLLEY WIRE

American Mine Door Co., Canton, Ohio
Electric Railway Equipment Co., Cincinnati, Ohio
Ohio Brass Co., Mansfield, O.
Union Electric Co., Pittsburgh, Pa.

STEEL, REINFORCING

American Mine Door Co., Canton, Ohio

STOKERS

Illinois Stoker Co., Alton, Ill.

STORAGE BATTERIES

Edison Storage Battery Co., Orange, N. J.
Electric Storage Battery Co., Philadelphia, Pa.
Mancha Storage Battery Locomotive Co., 1942 Railway Exchange Building, St. Louis, Mo.

STORES (company coupons)

Allison Coupon Co., Indianapolis, Ind.

STRETCHERS

Williams Improved Stretcher Co., Wheeling, W. Va.

SWITCHBOARDS, POWER

General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & M'g. Co., East Pittsburgh, Pa.

SWITCHBOARDS, TELEPHONE

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

SWITCHES, FROGS AND CROSSINGS

Cincinnati Frog & Switch Co., Cincinnati, Ohio
Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Union Electric Co., Pittsburgh, Pa.

SWITCHES (Points, Latches and Throws)

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

SWITCHES AND FROGS, TROLLEY

American Mine Door Co., Canton, Ohio
Egyptian Iron Works, Murphysboro, Ill.
Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Electric Railway Equipment Co., Cincinnati, Ohio
Ohio Brass Co., Mansfield, O.
Union Electric Co., Pittsburgh, Pa.

TANKS (Cylindrical, Acid Storage Gasoline, Lubricating Oil, etc.)

W. E. Caldwell Co., Louisville, Ky.
Egyptian Iron Works, Murphysboro, Ill.
Pacific Tank & Pipe Co., San Francisco, Cal.
Petroleum Iron Works, Sharon, Pa.

TELEPHONES, MINE

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.
Electric Service Supplies Co., Seventeenth and Cambria Streets, Philadelphia, Pa.
Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

THICKENERS

Dorr Company, Denver.

TIMBER (Mine)

Egyptian Timber Co., St. Louis, Mo.
Monongahela Wood Preserving Co., Pittsburgh, Pa.

TIFFLE EQUIPMENT

Egyptian Iron Works, Murphysboro, Ill.
Fairmont Mining Machinery Co., Fairmont, W. Va.
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio
Link-Belt Company, Chicago, Ill.
Phillips Mine & Mill Supply Co., Pittsburgh, Pa.
Roberts & Schaefer Co., Chicago, Ill.
Sandford-Day Iron Works, Knoxville, Tenn.
Webster Mfg. Co., Tiffin, Ohio

TRACKS, PORTABLE, RAIL, ETC.

Carnegie Steel Co., Pittsburgh, Pa.
Cincinnati Frog & Switch Co., Cincinnati, Ohio
West Virginia Rail Co., Huntington, W. Va.

THAMWAYS, AERIAL

Broderick & Bascom Rope Co., St. Louis, Mo.
Leschen & Sons Rope Co., A., St. Louis, Mo.
Waterbury Co., 80 South Street, New York City

The field of the skip hoist

Essentially, the skip hoist is an elevator and, like the bucket elevator, is used mainly for elevating bulk materials.

The field of the skip hoist begins where the bucket elevator reaches its limitations, the bucket elevator being economical for only moderate capacities and non-abrasive materials. For heavy work—high lifts—large capacities and abrasive materials, the skip hoist will be found remarkably economical and dependable.

No conditions are too severe for properly built skip hoists; no capacity is too great; no lift too high. Mines, Mills, Smelters and Power Plants can use skip hoists to advantage.

The C. O. Bartlett & Snow Co.

Main Office and Works: Cleveland, Ohio

Perforated Mine Screens

We bring you 15 years experience in the manufacture of Screens for all mining purposes, in Steel, Copper, Acid-Resising Manganese Bronze, Zinc, etc. Also Perforated Elevator Buckets, Simplex Rivetless Chain and Improved Coal Preparing Machinery.

Our Screens are reputed for Durability and Accuracy to Mesh. Write today for Descriptive Catalog.

**CROSS ENGINEERING
COMPANY
SHOPS AND FOUNDRY
Carbondale Pennsylvania**

**HAZARD
WIRE ROPE
INSULATED
WIRES & CABLES**



HAZARD MFG CO
WILKES-BARRE, PA

NEW YORK PITTSBURGH CHICAGO
533 CANAL STREET 1ST NAT'L BANK 552 W ADAMS ST

Mine Ropes

OF QUALITY
for
HOISTING, HAULAGE or SLOPE,
also
PATENT "KILINDO"
NON-ROTATING

Wire Rope

FOR SHAFT SINKING.
Sole Makers
MONARCH PATENT
MINE CAR HITCHINGS

Adaptable to any System
Haulage. Absolutely Safe

**Macomber & Whyte
Rope Co.**

RACINE AVENUE
KENOSHA, WISC.

The Indiana Laboratories Co.

Incorporated

Chemists, Assayers, Engineers, Shippers'
Representatives

Hammond, Ind.

Philipsburg, Mont.

W. H. NICHOLSON & CO.

Manufacturers of

Wyoming Automatic Eliminators,
Steam Traps and Steam Separators,
particularly adapted for mine service.

Wilkes-Barre,

Penna.

SULPHURIC ACID, CHEMICALS

CHEMICALLY PURE ACIDS AND AMMONIA
For Assaying and Fine Chemical Analysis

Manufactured by

THE WESTERN CHEMICAL MFG. CO.
Ask your dealer

DENVER, COLO.

THE BUCKEYE ROLLING MILL CO.

Main Offices Works
Steubenville, Ohio Newark, Ohio

Light Steel Rails All Sections

12 lb. to 40 lb., inclusive, with accessories

Quick shipment is our specialty

Orvis C. Hoffman

Leon H. Hoffman

**DIAMOND CORE DRILLING
CONTRACTORS**

HOFFMAN BROS., Punxsutawney, Pa.

Our Specialty—Testing Bituminous Coal Lands
Up-to-date Equipments Expert Drill Runners
Inquiries Solicited

SCREENS OF ALL KINDS

Chicago Perforating Co.
2443 West 24th Place
Tel. Canal 1419 CHICAGO, ILL.

TOUT & McCARTHY, Butte, Mont.
Assayers and Chemists
Assays, Analysis and Tests, Independent Control Work

RICHARDS, J. W.

ASSAYER AND CHEMIST
1118 Nineteenth St., Denver

Ore Shippers' Agent. Write for terms.
Representatives at all Colorado smelters.

Cable Address Usual Codes
"Macepayne" Pittsburgh, Pa.

HENRY MACE PAYNE
Consulting Mining Engineer

1203 Chamber of Commerce Building
PITTSBURGH

T. Marioneaux

B. N. C. Stott

C. M. Beck

Marioneaux, Stott & Beck

Attorneys and Counselors

Salt Lake City

SEELEY W. MUDD, Mining Engineer
1208 Hollingsworth Building Los Angeles, Cal.
Code: Bedford McNeill

Herbert Goodall Archie J. Goodall
GOODALL BROS., Assayers and Metallurgists
Smelter Shipments Checked Controls a Specialty
38 South Main Street, HELENA, MONTANA

ELECTRIC RAILWAY EQUIPMENT CO., Cincinnati, Ohio

18b



"Sure Grip" Clamp

To insure uninterrupted
service from your trolley
lines, use

"Elreco"
line material.

Catalog on request



Combination Mine Hanger

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

TRANSFORMERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

TRAPS

Nicholson & Co., W. H., Wilkes-Barre, Pa.

TROLLEY (Hangers and Clamps)

Electric Railway Equipment Co., Cincinnati, Ohio

Ohio Brass Co., Mansfield, Ohio

TROLLEY, MATERIAL, OVER-HEAD

Electric Railway Equipment Co., Cincinnati, Ohio

Electric Service Supplies Co., Philadelphia, Pa.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Ohio Brass Co., Mansfield, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

TROLLEY WHEELS AND HARPS

Egyptian Iron Works, Murphysboro, Ill.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

Electric Railway Equipment Co., WASHERRIES, COAL

Cincinnati, Ohio

Electric Service Supplies Co., Philadelphia, Pa.

Ohio Brass Co., Mansfield, Ohio

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

TRUCKS

Four Wheel Drive Co., Clintonville, Wis.

General Motors Truck Co., Pontiac, Mich.

Winther Motor Truck Co., Konosha, Wis.

TUBING

Letsome & Co., A. R., Lytton Building, Chicago, Ill.

Bernis Bro. Bag Co., Flexoid, St. Louis, Mo.

TURBINES, STEAM

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

VALVES

Davis Supply Co., Chicago, Ill.

Crane & Co., Chicago, Ill.

Ohio Brass Co., Mansfield, Ohio

WAGON LOADERS

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio

Link-Belt Company, Chicago, Ill.

Link-Belt Company, Chicago, Ill.

Roberts & Schaefer Co., Chicago, Ill.

Webster Mfg. Co., Tiffin, Ohio

WEIGHT RECORDERS, AUTOMATIC

Streeter-Amet Weighing & Recording Co., 4101-4105 Ravenswood Avenue, Chicago, Ill.

WEIGHTS

Thompson Balance Co., Denver, Colo. Ainsworth, Wm. & Son, Denver, Colo.

WELDING SUPPLIES

Imperial Brass Co., 537 S. Dearborn St., Chicago, Ill.

WIRE & CABLE

American Steel & Wire Co., Chicago, New York

Broderick & Bascom Rope Co., St. Louis, Mo.

Electrical Material Co., 618 W. Jackson Boulevard, Chicago, Ill.

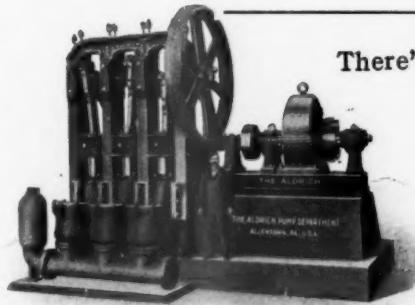
Hazard Mfg. Co., Wilkes-Barre, Pa.

ZINC BOXES

Koering Cyaniding Process Co., Detroit, Mich.

ZINC (Rolled Sheets and Strips)

Illinois Zinc Co., Peru, Ill.



There's an **ALDRICH PUMP**

**Triplex or Quintuplex
For Almost Every
Pumping Requirement**

**Send Your Specifications
to**

**The Aldrich Pump Co.
Allentown, Pa., U. S. A.**



"PIGS IS PIGS" FRICITION AND RUBBER TAPES

You must Choose Your Brand

**BUT WHEN IT
COMES TO**

18 Years Ago We Created

COLUMBIA FRICITION TAPE AND VELVA PARA RUBBER TAPE

**Since then we have sold Millions of Pounds of these Tapes, and
we are still selling them**

**THERE'S A REASON—FIND OUT FOR YOURSELF
By sending us your next order. Price and Satisfaction Guaranteed**

**ELECTRICAL MATERIAL CO. Formally The
W. R. GARTON CO. Chicago, Illinois**

AMERICAN MINING CONGRESS

OFFICERS AND COMMITTEES, 1917

OFFICERS

WALTER DOUGLAS, President
 HARRY L. DAY, First Vice-President
 M. S. KEMMERER, Second Vice-President
 GEORGE H. CROSBY, Third Vice-President
 J. F. CALLBREATH, Secretary

EXECUTIVE COMMITTEE

CARL SCHOLZ CHARLES M. MÖDERWELL
 WALTER DOUGLAS

DIRECTORS

M. S. KEMMERER, New York
 IRVING T. SNYDER, Denver, Colo.
 W. J. RICHARDS, Pottsville, Pa.
 JAMES E. TALMAGE, Salt Lake City, Utah
 CHARLES M. MÖDERWELL, Chicago, Ill.
 GEORGE H. CROSBY, Duluth, Minn.
 SAMUEL A. TAYLOR, Pittsburgh, Pa.
 L. A. FRIEDMAN, Lovelock, Nevada
 CARL SCHOLZ, Chicago, Ill.
 HARRY L. DAY, Wallace, Idaho
 CHARLES S. KEITH, Kansas City, Mo.
 WALTER DOUGLAS, New York.
 JOHN BARNESON, San Francisco, Cal.

COMMITTEES, 1917

STATE VICE-PRESIDENTS

Alaska	B. F. Millard	Valdez
Arizona	J. P. Hodgson	Bisbee
Arkansas	C. C. Woodson	Huntington
California	Charles E. Knox	Berkeley
Colorado	Irving Howbert	Colorado Springs
Idaho	James F. McCarthy	Wallace
Indiana	J. C. Kolsen	Terre Haute
Illinois	F. W. De Wolf	Urbana
Kansas	Joseph Fletcher	Frontenac
Michigan	Charles E. Lawrence	Palatka
Missouri	W. B. Shackelford	Webb City
Minnesota	Dwight E. Woodbridge	Duluth
Montana	James L. Bruce	Butte
Nebraska	Frank A. Manley	Omaha
Nevada	C. B. Lakenan	McGill
New Mexico	T. H. O'Brien	Dawson
Ohio	W. R. Woodford	Cleveland
Oregon	Harold N. Lawrie	Portland
Oklahoma	Dorset Carter	McAlester
Pennsylvania	* Morris Williams	Philadelphia
South Carolina	H. L. Scaife	Clinton
Texas	D. C. Earnest	Dallas
Virginia	E. A. Schubert	Roanoke
Wisconsin	F. O. Granberg	Oshkosh
Wyoming	W. D. Brennan	Cheyenne
West Virginia	Ernest Chilson	Rush Run
Washington	G. B. Dennis	Spokane

REVISION OF MINERAL LAND LAWS

E. B. KIRBY, St. Louis, Mo., *Chairman*
 George E. Collins.....Denver, Colo.
 Thomas T. Read.....New York City

ALASKAN AFFAIRS

Falcon Joslin.....Fairbanks, Alaska
 George C. Hazlett.....Cordova, Alaska
 William Griffith.....Scranton, Pa.

WORKMEN'S COMPENSATION

T. L. LEWIS, Charleston, W. Va., *Chairman*
 A. M. Ogle.....Terre Haute, Ind.
 W. R. Woodford.....Cleveland, Ohio

UNIFORM MINE REPORTS AND ACCOUNTING

SAMUEL A. TAYLOR, Pittsburgh, *Chairman*
 E. T. Bent.....Chicago, Ill.
 J. C. McKinley.....Wheeling, W. Va.

ARBITRATION, MEDIATION AND CONCILIATION

The Board of Directors

CONFERENCE WITH FEDERAL TRADE COMMISSION

CHARLES M. MÖDERWELL, Chicago, *Chairman*
 Hugh Shirke.....Terre Haute, Ind.
 M. S. Kemmerer.....New York City
 Harry N. Taylor.....Kansas City, Mo.
 F. S. Landstreet.....New York City

STANDARDIZATION OF ELECTRICAL EQUIPMENT

In Coal Mines
 GRO. R. WOOD, Philadelphia, Pa., *Chairman*
 S. A. Taylor.....Pittsburgh, Pa.
 J. R. Bent.....Oglesby, Ill.
 G. T. Watson.....Fairmont, W. Va.
 H. M. Warren.....Scranton, Pa.
 G. A. Schreier.....Dover, Ill.
Pittsburgh, Pa.

In Metal Mines

H. S. SANDS, Denver, Colo., *Chairman*
 C. A. Chase.....Denver, Colo.
 Sanford B. Belden.....Columbus, Ohio

MINERAL STATISTICS

OTTO RUHL, Joplin, Mo., *Chairman*
 Fred'k. Burbidge.....Spokane, Wash.
 J. C. Dick.....Salt Lake City, Utah

FORESTRY RELATIONS

CARNEY HARTLEY, Denver, Colo., *Chairman*
 F. J. Alexander.....Denver, Colo.
 C. H. Gibbs.....Salt Lake City, Utah
 William McDermott.....Tucson, Ariz.

MINE TAXATION

In Metal Mines
 D. L. WEBB, Denver, Colo., *Chairman*
 Prof. L. A. Young.....Urbana, Ill.
 D. W. Strickland.....New York City
 Heath Steele.....New York City
 D. W. Brunton.....Denver, Colo.
 John M. Hayes.....Salt Lake City, Utah

MINING INVESTMENTS

A. G. MACKENZIE, Salt Lake City, *Chairman*
 J. F. Erisman.....Denver, Colo.
 George H. Dern.....Salt Lake City, Utah

COMMITTEES ON STATE LEGISLATION

ALASKA

Col. B. F. Millard, *Chairman*.....Valdez, Alaska
 Charles A. Sulzer.....Sulzer, Alaska
 W. T. Burns.....Fairbanks, Alaska

ARIZONA

J. P. Hodgson, *Chairman*.....Bisbee, Ariz.
 L. S. Cates.....Ray, Ariz.
 B. B. Gottsberger.....Mimi, Ariz.

ARKANSAS

C. C. Woodson, <i>Chairman</i>	Huntington, Ark.
W. T. Satterfield.....	Little Rock, Ark.
M. M. McWilliams.....	Spadra, Ark.

CALIFORNIA

Charles B. Knox, <i>Chairman</i>	Berkeley, Cal.
Walter H. Wiley.....	Los Angeles, Cal.
Seeley W. Mudd.....	Los Angeles, Cal.

COLORADO

E. A. Colburn, <i>Chairman</i>	Denver, Colo.
Robert M. Henderson.....	Breckenridge, Colo.

IDAHO

James P. McCarthy, <i>Chairman</i>	Wallace, Idaho
Jerome J. Day.....	Moscow, Idaho
Ravenal Macbeth.....	Mackey, Idaho

KANSAS

Jos. Fletcher, <i>Chairman</i>	Frontenac, Kans.
Francis Keegan.....	Pittsburgh, Kans.
Ira Clemens.....	Pittsburgh, Kans.

NEBRASKA

Frank A. Manley, <i>Chairman</i>	Omaha, Nebr.
--	--------------

COMMITTEES ON FEDERAL LEGISLATION

ALABAMA

Dr. Eugene A. Smith, <i>Chairman</i>	University, Ala.
W. P. G. Harding, 1835 Wyoming Avenue N. W.	Washington, D. C.
John W. Abercrombie.....	Tuscaloosa, Ala.

ARIZONA

Charles F. Willis, <i>Chairman</i> , Director, Bureau of Mines.....	Tucson, Ariz.
G. H. Dowell.....	Douglas, Ariz.
Courtenay DeKalb.....	Tucson, Ariz.

ARKANSAS

N. F. Drake, <i>Chairman</i>	Fayetteville, Ark.
------------------------------------	--------------------

COLORADO

R. D. George, <i>Chairman</i>	Boulder, Colo.
Fred Carroll.....	Denver, Colo.
Bulkeley Wells.....	Telluride, Colo.

GEORGIA

S. W. McCallie, <i>Chairman</i>	Atlanta, Ga.
N. P. Pratt.....	Atlanta, Ga.
B. M. Hall.....	Atlanta, Ga.

ILLINOIS

F. W. DeWolf.....	Urbana, Ill.
-------------------	--------------

INDIANA

Edward Barrett, <i>Chairman</i>	Indianapolis, Ind.
Frank I. Pearce.....	Indianapolis, Ind.
John C. Wright.....	Boonville, Ind.

IOWA

Geo. F. Kay, <i>Chairman</i>	Iowa City, Iowa
Edward Sweeney.....	Des Moines, Iowa
Prof. L. C. Hodson, State College.....	Ames, Iowa

IDAHO

Irvin E. Rockwell, <i>Chairman</i>	Bellevue, Idaho
J. H. Richards.....	Boise, Idaho
Eugene R. Day.....	Wallace, Idaho

KENTUCKY

J. B. Hosing, <i>Chairman</i>	Frankfort, Ky.
A. G. Spillman.....	Lexington, Ky.
Perry Gorman.....	Hazard, Ky.

MAINE

Prof. C. Vey Holman, <i>Chairman</i> .	Rockland, Me.
--	---------------

MARYLAND

Wm. B. Clark, <i>Chairman</i> , Johns Hopkins University.....	Baltimore, Md.
H. V. Hesse.....	Frostburg, Md.

MICHIGAN

E. B. Mathews, Johns Hopkins University.....	Baltimore, Md.
--	----------------

R. C. Allen, <i>Chairman</i>	Lansing, Mich.
------------------------------------	----------------

ARKANSAS

T. H. O'Brien, <i>Chairman</i>	Dawson, N. Mex.
George H. Utter.....	Silver City, N. Mex.
John Sully.....	Santa Rita, N. Mex.

OKLAHOMA

Dorset Carter, <i>Chairman</i>	Oklahoma City, Okla.
F. B. Drew.....	McAlester, Okla.
P. R. Allen.....	McAlester, Okla.

OREGON

H. N. Lawrie, <i>Chairman</i> , 506 Yeon Building.....	Portland, Oreg.
A. M. Swardley.....	Corvallis, Oreg.
H. M. Parks.....	Corvallis, Oreg.

VIRGINIA

E. A. Schubert, <i>Chairman</i>	Roanoke, Va.
M. M. Caldwell.....	Roanoke, Va.
J. N. Harmon.....	Tazewell, Va.
Percival Johnson.....	Pulaski, Va.

WISCONSIN

H. O. Granberg, <i>Chairman</i>	Oshkosh, Wis.
---------------------------------------	---------------

WYOMING

W. D. Brennan, <i>Chairman</i>	Cheyenne, Wyo.
P. J. Qualey.....	Kemmerer, Wyo.
H. S. Hopka.....	Deets, Wyo.

MINNESOTA

Dr. W. H. Emmons, <i>Chairman</i>	Minneapolis, Minn.
Rukard Hurd.....	St. Paul, Minn.
W. R. Appleby.....	Minneapolis, Minn.

MISSISSIPPI

E. N. Lowe, <i>Chairman</i>	Jackson, Miss.
W. L. Kennon.....	University, Miss.
Louis Roark.....	Agricultural College, Miss.

MISSOURI

H. A. Buehler, <i>Chairman</i>	Rolla, Mo.
--------------------------------------	------------

NEBRASKA

E. H. Barbour, <i>Chairman</i>	Lincoln, Nebr.
Robt. W. Ellis.....	Lincoln, Nebr.
E. F. Schramm.....	Lincoln, Nebr.

NEW MEXICO

Chas. T. Kirk, <i>Chairman</i>	Albuquerque, N. M.
Ress H. Beddow.....	Gallup, N. Mex.
J. Van Houten.....	Raton, N. Mex.

NORTH CAROLINA

Jos. Hyde Pratt, <i>Chairman</i>	Chapel Hill, N. C.
Frank Hewitt.....	Asheville, N. C.
Thos. F. Woodruff.....	Mount Airy, N. C.

NORTH DAKOTA

A. G. Leonard, <i>Chairman</i>	University, N. D.
J. W. Bliss.....	Bismarck, N. D.
E. J. Babcock.....	University, N. D.

OHIO

J. A. Bownocker, <i>Chairman</i>	Columbus, Ohio
--	----------------

OREGON

H. M. Parks, <i>Chairman</i>	Corvallis, Ore.
J. Frank Watson.....	Portland, Ore.
P. W. Scofield.....	Sumpter, Ore.

PENNSYLVANIA

Richard R. Rice, <i>Chairman</i>	Beaver, Pa.
R. A. F. Penrose, Jr., Bulitt Bldg.	Philadelphia, Pa.
Elmer E. Hiles, Oliver Building.....	Pittsburgh, Pa.

SOUTH DAKOTA

Ellwood C. Perisho, <i>Chairman</i>	Brookings, S. Dak.
---	--------------------

TENNESSEE

A. H. Purdue, <i>Chairman</i>	Nashville, Tenn.
John W. Fry.....	Columbia, Tenn.
W. P. Albright.....	Nashville, Tenn.

VIRGINIA

Thomas L. Watson, <i>Chairman</i>	Charlottesville, Va.
---	----------------------

WEST VIRGINIA

I. C. White, <i>Chairman</i>	Morgantown, W. Va.
------------------------------------	--------------------

J. C. McKinley.....	Wheeling, W. Va.
---------------------	------------------

J. W. Dawson.....	Charleston, W. Va.
-------------------	--------------------

WYOMING

L. W. Trumbull, <i>Chairman</i>	Cheyenne, Wyo.
---------------------------------------	----------------

O. M. Beck.....	Atlantic City, Wyo.
-----------------	---------------------

P. J. Qualey.....	Kemmerer, Wyo.
-------------------	----------------

The American Mining Congress

THE AMERICAN MINING CONGRESS is a voluntary association supported by the fees and dues of its members. It is striving to bring about:

First—Safety and efficiency in mining operations.

Second—Intelligent conservation with a view to the highest utilization and the prevention of waste of mineral resources.

Third—The protection of mining investors against fraud and misrepresentation; the stimulation of investment in real mining and to demonstrate that mining is a business and not a gamble.

Fourth—Uniformity in state laws governing mining operations carried on under like conditions.

Fifth—Such federal cooperation through research and investigation as will solve those problems of production, treatment and transportation which are essential to the highest development of the Mining Industry.

Sixth—A solution of the economic problems underlying the coal industry

Seventh—A more complete cooperation between miner and operator through the settlement of disputes by the economical rule of reason, rather than by the wasteful method of strikes and lockouts, and to foster in every possible way those conditions which make for just, considerate and helpful employers and well paid, efficient and loyal workmen.

If you are interested in this work, the appended application blank will show the way to help. Come in and bring the neighbor who would join this movement. Mail application to

THE AMERICAN MINING CONGRESS

Munsey Building, Washington, D. C.

APPLICATION FOR MEMBERSHIP

I desire to be enrolled as a member of the

AMERICAN MINING CONGRESS

and herewith enclose \$..... membership fee and dues for the year 1917 (\$2.00 of which is designated as subscription to the MINING CONGRESS JOURNAL).

Name

Address

Associate membership (Admission fee \$1.00 Annual dues \$2.00) Total \$3.00

Active	"	("	"	15.00	"	"	10.00)	"	25.00
Life	"	-	-	-	-	-	-	-	-	100.00

If it happens in Washington—

If it is of interest to the Mining Industry—

IT IS IN THE

MINING CONGRESS JOURNAL

The Mining Congress Journal Covers:

Congress
The Bureau of Mines
The Patent Office
The Land Office
The Geological Survey
The Supreme Court

The Interstate Commerce Commission
The Department of Labor and other
Bureaus and Courts
They all develop news of important
interest to mine operators

Have you noticed that the MINING CONGRESS JOURNAL alone gives a
detailed account of the many important meetings of mining
men in Washington?

THIS IS A “GET-TOGETHER” TIME

If you are in the mining industry The American Mining Congress needs you and you need it.

Because

It represents the one serious effort to bring all branches of the mining industry into one organization.

It has but one fundamental purpose—and that is to voice and to contend for whatever is of vital interest to the life of the mining industry.

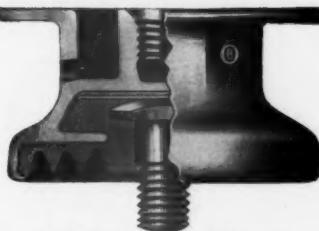
You can't fight abuses alone.

You can't improve an industry alone.

You can't secure much-needed legislation alone.

You will find an application blank on page 15b.

Fill in and mail it to-day to The American Mining Congress, Munsey Building, Washington, D. C.



UNIVERSAL FORM 1 HANGER
For Roof or Timber

O-B Trolley Hangers For Dependable Service

When your trolley wire is supported and insulated by O-B Trolley Hangers you can be sure of dependable service.

The reasons are—correct design—Dirigo Composition Insulation—sturdy malleable bodies, O-B sherardized.

See catalog No. 16

The Ohio Brass Co., Mansfield, O.

Hockensmith Wheel and Mine Car Co.

(Pittsburgh District) Penns Station, Pa.

Manufacturers of

Chilled Annealed
Mine Car Wheels

Self-Oiling Roller Bearing

Angle Bar Trucks

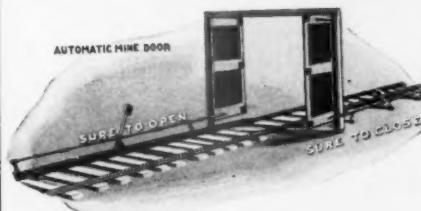
The Truck for Severe Service

Mine Cars

Steel—Composite—Wood

*Awarded Gold Medal Panama-Pacific
Exposition for Mine Cars, Wheels
and Oiling System*

Catalogue "M" upon request



Practical Reasons for AMERICAN MINE DOORS

Every mining man knows that hand operated doors are dangerous and inefficient.

Write down all their drawbacks in succession—every one you can think of. The American Mine Door isn't any one of them, but it IS safe and certain at all times.

Doesn't that make it interesting to you? Upon request, we shall be glad to tell you more about it.

THE AMERICAN MINE DOOR CO.
Canton, Ohio

Car Wheel Service

Our recent change of name does not in any way affect the quality of our MINE CAR WHEELS. Neither has the "sky-high" prices of Pig Iron and Coke induced us to lower the quality.

We consider QUALITY & SERVICE first—Price as an incident.

Let us demonstrate to you REAL CAR WHEEL SERVICE.

A trial will cost you nothing.

EGYPTIAN IRON WORKS

formerly
Southern Illinois Machine & Foundry Co.
Murphysboro, Ill.



Handle the Air at Low Velocities

The secret of successful fan operation lies in providing fans of ample size to handle the air at low velocities. High velocities and small fans are the causes of power leaks and high operating expense. You can save up to 30 % of your power bills by installing

Jeffrey Stepped Multi-Bladed Fans

Power used to accelerate air to high speeds is entirely lost, hence the lower velocity of the air as it enters the fan, the greater will be the power economy. Jeffrey fans are designed with ample capacity so that no power is wasted in useless effort.



The Jeffrey MULTI-BLADED WHEEL

gradually accelerates the air to the speed required by means of its stepped series of blades. In this way there is no shock or sudden change of direction or speed which results in a distinct loss which can never be regained.

Jeffrey engineers will gladly assist you in solving your ventilation problems without involving any obligation. Write today for our new Bulletin on Mine Ventilation No. 229-F.

THE JEFFREY MFG. CO., 958 North Fourth St., Columbus, O.

BRANCHES: New York Boston Charleston, W. Va. Philadelphia Scranton Pittsburgh
Chicago St. Louis Dallas Birmingham Cleveland Milwaukee Montreal

Denver Office: First National Bank Building

Seattle Office: L. C. Smith Building

